UNITED STATES DEPARTMENT OF COMMERCE
National Telecommunications and Information Administration
Washington, D.C. 20230

January 29, 1999

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
The Portals
445 Twelfth Street, S.W.
Washington, D.C. 20554

Re: *Ex Parte* Letter in Satellite Delivery of Network Signals to Unserved Households for Purposes of the Satellite Home Viewer Act, Part 73 Definition and Measurement of Signals of Grade B Intensity, CS Docket No. 98-201, RM No. 9335, RM No. 9345

Dear Ms. Salas:

Enclosed please find two copies (6 total) of the letter from Larry Irving, Assistant Secretary for Communications and Information, U.S. Department of Commerce, to Chairman William Kennard in each of the above-referenced proceedings. Copies were hand-delivered to each of the Commissioners and to Deborah A. Lathen, Chief of the Cable Services Bureau.

Please direct any questions you may have regarding this filing to the undersigned. Thank you for your cooperation.

Respectfully submitted,

Kathy Smith
Acting Chief Counsel

Enclosures

UNITED STATES DEPARTMENT OF COMMERCE
The Assistant Secretary for Communications and Information
Washington, D.C. 20230

January 29, 1999

The Honorable William Kennard
Chairman
Federal Communications Commission
The Portals
445 Twelfth Street, S.W.
Washington, D.C. 20554

RE: *Ex Parte* Letter in Satellite Delivery of Network Signals to Unserved Households for Purposes of the Satellite Home Viewer Act, Part 73 Definition and Measurement of Signals of Grade B Intensity, CS Docket No. 98-201, RM No. 9335, RM No. 9345

Dear Chairman Kennard:

I am writing today to applaud the Commission for expeditiously undertaking a rulemaking to define "over-the-air signal of grade B intensity" for purposes of the Satellite Home Viewer Act.[1] It is my hope that the federal courts[2] will benefit from the Commission's guidance on this important issue.

As noted in my September 4, 1998, letter to you, the definition of "signal of grade B intensity" is key to whether many consumers will have real choice of programming providers. This Administration has strongly supported the development of robust competition in the multichannel video programming marketplace as the way to bring greater viewing choices, lower prices and better services to consumers.

The Institute for Telecommunication Sciences (ITS) of the National Telecommunications and Information Administration has provided sample data on the number of households that could be affected by the various prediction methods under consideration by the Commission.[3]

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[1] Satellite Home Viewer Act of 1994, Pub. L. No. 103-369, 108 Stat. 3477 (1994) (codified at 17 U.S.C. § 119).

[2] *See CBS Inc., et al. v. PrimeTime 24 Joint Venture*, Case No. 96-3650-CIV-NESBITT (S.D. Fla. July 10, 1998); *ABC Inc. v. PrimeTime 24 Joint Venture*, Case No. Civ. A. 1:97CV00090 (M.D. N.C. July 16, 1998).

[3] A number of commenters in this proceeding supported the adoption of TIREM (Terrain Integrated Rough Earth Model) for predicting unserved households. The original version of TIREM was developed by the Electromagnetic Compatability Analysis Center (ECAC) within the Department of Defense in the 1960s and has continued to be modified by that organization.

ITS took a sample of one network affiliate station from 16 Neilsen Media Research Designated Market Areas (DMAs) ranked by number of households. This sample reflects significant geographic diversity, communities of various sizes, UHF and VHF stations with varying channel numbers, and equal numbers of affiliates of each of the four networks. [4] ITS maps plotting the results of this sample graphically reveal the variations in the number of affected households of selection by using the prediction methods: FCC F (50,50) Field Strength Charts (47 C.F.R. § 73.699 Figures 9 and 10), Longley-Rice ITM,[5] and TIREM Version 3.[6] Maps for the sampled stations are available at http://flattop.its.bldrdoc.gov/gifs_ntia/gifs_ntia_012899/index.html.

While NTIA takes no position on the specific definition that the Commission should adopt, we urge the Commission to adopt a definition and measurement that will best promote competition and consumer choice.

ECAC's name was recently changed to the Joint Spectrum Center (JSC).

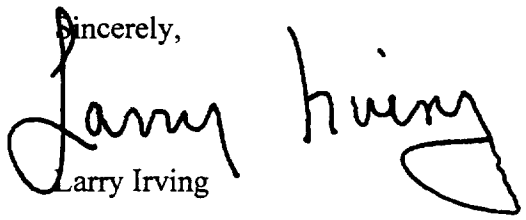
[4] For a summary of this data, *see* the attached table entitled "Network Affiliate Sample from 16 DMAs."

[5] Longley-Rice ITM (Irregular Terrain Model, Version 1.2.2) is available to the public from an NTIA web site at http://elbert.its.bldrdoc.gov/itm.html. The files at this site include source code and model description.

[6] TIREM Version 3 is available to the public from an NTIA web site at http://ntiacsd.ntia.doc.gov/msam. The files at this site include the source and executable code and a 30-arc second topographic database (*i.e.*, the database contains the terrain elevations in height above mean sea level for every 30 arc-seconds of latitute and longitude fo rthe earth's surface). This version is approximately 20 years old and was developed by ECAC/JSC. For purposes of this sample, ITS modified TIREM Version 3 to permit access to the 3-second topographic database commonly used for broadcast studies. TIREM Version 4 is the latest version of the model also developed and maintained by the JSC. This model improves on the 20 year-old coding used in Version 3 but fundamentally uses the same technical algorithms and yields similar but not identical results as Version 3. This version of the model, however, has limited distribution with export restrictions under the Arms Control Act (22 U.S.C. § 2751 *et seq.*) or Executive Order 12460. While NTIA is a Federal agency eligible to receive TIREM source code, other organizations may not be eligible to receive TIREM Version 4 source or executable code without explicit permission from JSC.

Thank you for your consideration of these views.

Sincerely,



Larry Irving

Enclosures

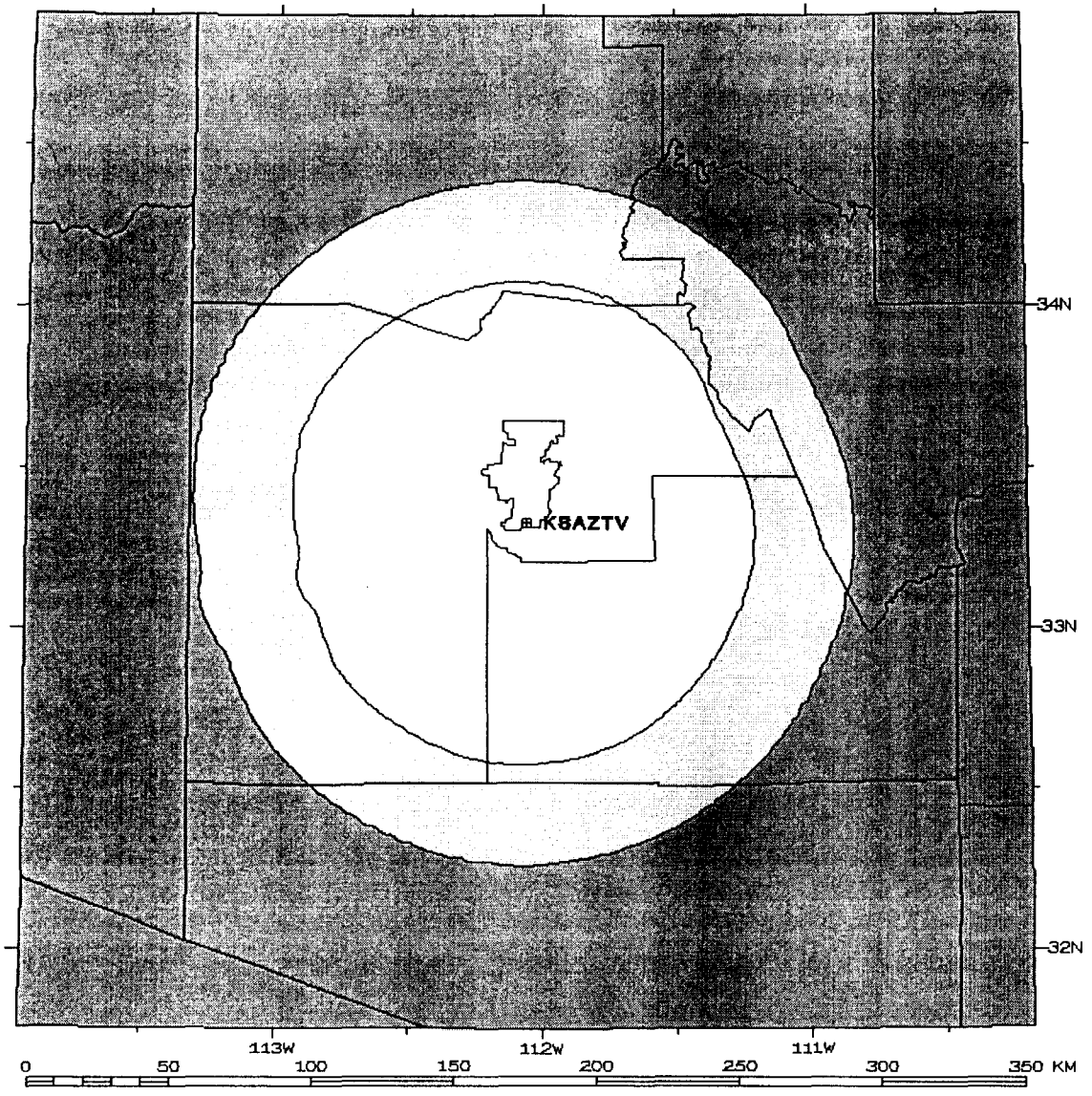
cc: The Honorable Susan Ness
The Honorable Harold Furchtgott-Roth
The Honorable Michael Powell
The Honorable Gloria Tristani
Deborah A. Lathen, Chief, Cable Services Bureau

NETWORK AFFILIATE SAMPLE FROM 16 DMAS

CS Dkt. No. 98-201, RM Nos. 9335, 9345

Prepared by the Institute for Telecommunication Sciences

Rank	DMA	Station-Channel	Network	Model: Households (Grade B or Greater)		
				FCC	Longley-Rice	TIREM
17	Phoenix	KSAZ-10	FOX	818,000	815,000	830,000
2	Los Angeles	KABC-7	ABC	4,627,000	4,549,000	4,688,000
5	San Francisco-Oakland-San Jose	KTVU-2	FOX	2,504,000	2,424,000	2,403,000
26	San Diego	KNSD-39	NBC	851,000	1,026,000	1,082,000
7	Washington, D.C.	WRC-4	NBC	2,324,000	2,309,000	2,483,000
16	Miami-Ft. Lauderdale	WFOR-4	CBS	1,477,000	1,477,000	1,506,000
3	Chicago	WMAQ-5	NBC	3,197,000	3,258,000	3,604,000
23	Baltimore	WMAR-2	ABC	2,686,000	2,685,000	3,130,000
21	St. Louis	KTVI-2	FOX	976,000	997,000	1,069,000
28	Charlotte	WBTV-3	CBS	1.132,000	1,111,000	1,541,000
24	Portland	KOIN-6	CBS	778,000	716,000	735,000
19	Pittsburgh	WTAE-4	ABC	1,251,000	1,152,000	1,482,000
88	Columbia, S.C.	WIS-10	NBC	479,000	518,000	878,000
93	Tri-Cities, TN-VA	WJHL-11	CBS	576,000	262,000	309,000
59	Richmond-Petersburg	WRLH-35	FOX	363,000	471,000	629,000
9	Detroit	WXYZ-7	ABC	1,978,000	2,022,000	2,316,000



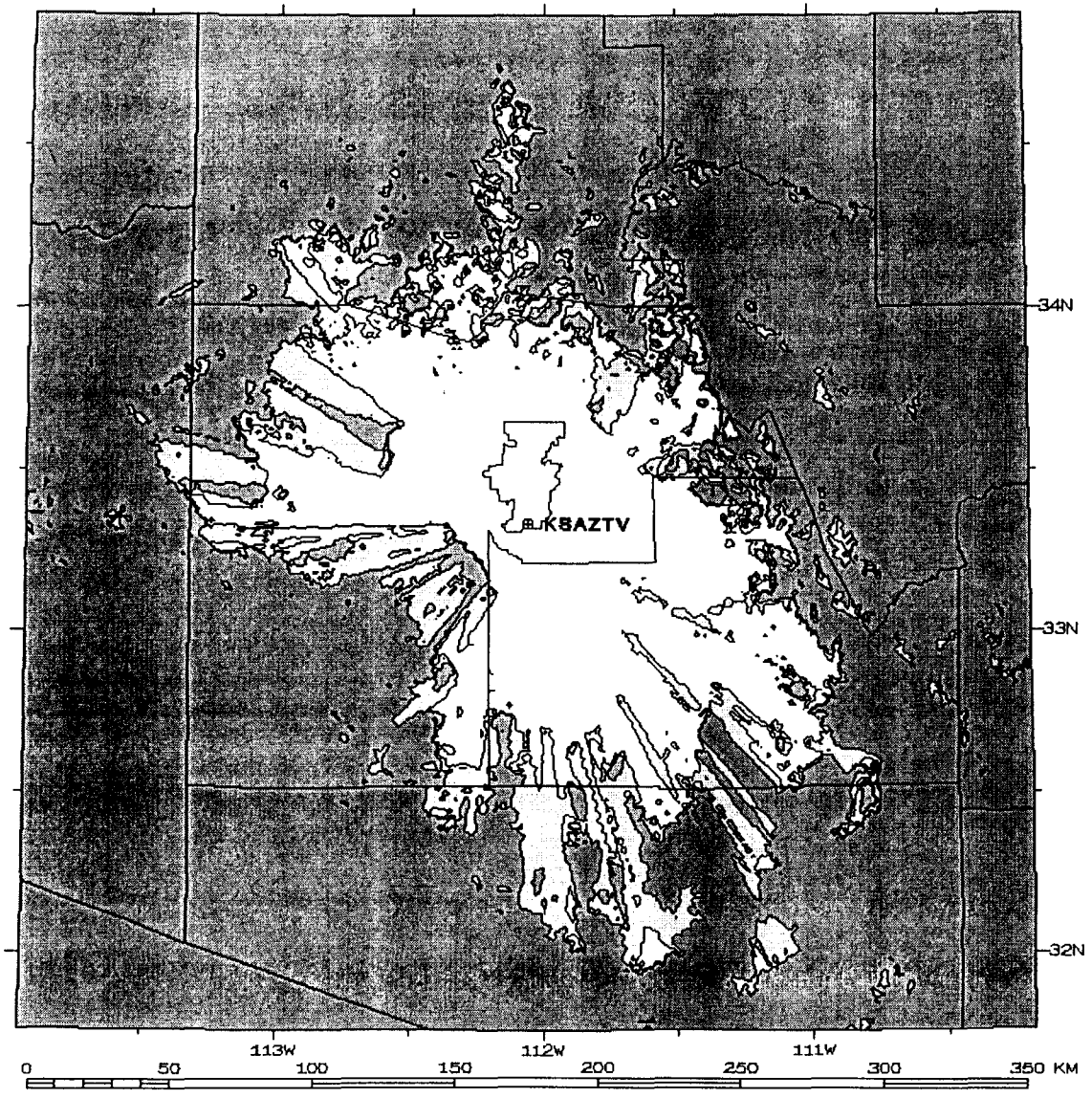
Market 17
Phoenix
KSAZ/Channel 10
Network: FOX
FCC Contour Model (Grade B - 50/50)

SHVA Study

Grade A
Area: 21080. sq km
Population: 2804000.
Households: 808000.

Grade B
Area: 21690. sq km
Population: 37000.
Households: 10000.

Less than grade B
Area: 79330. sq km
Population: 990000.
Households: 300000.



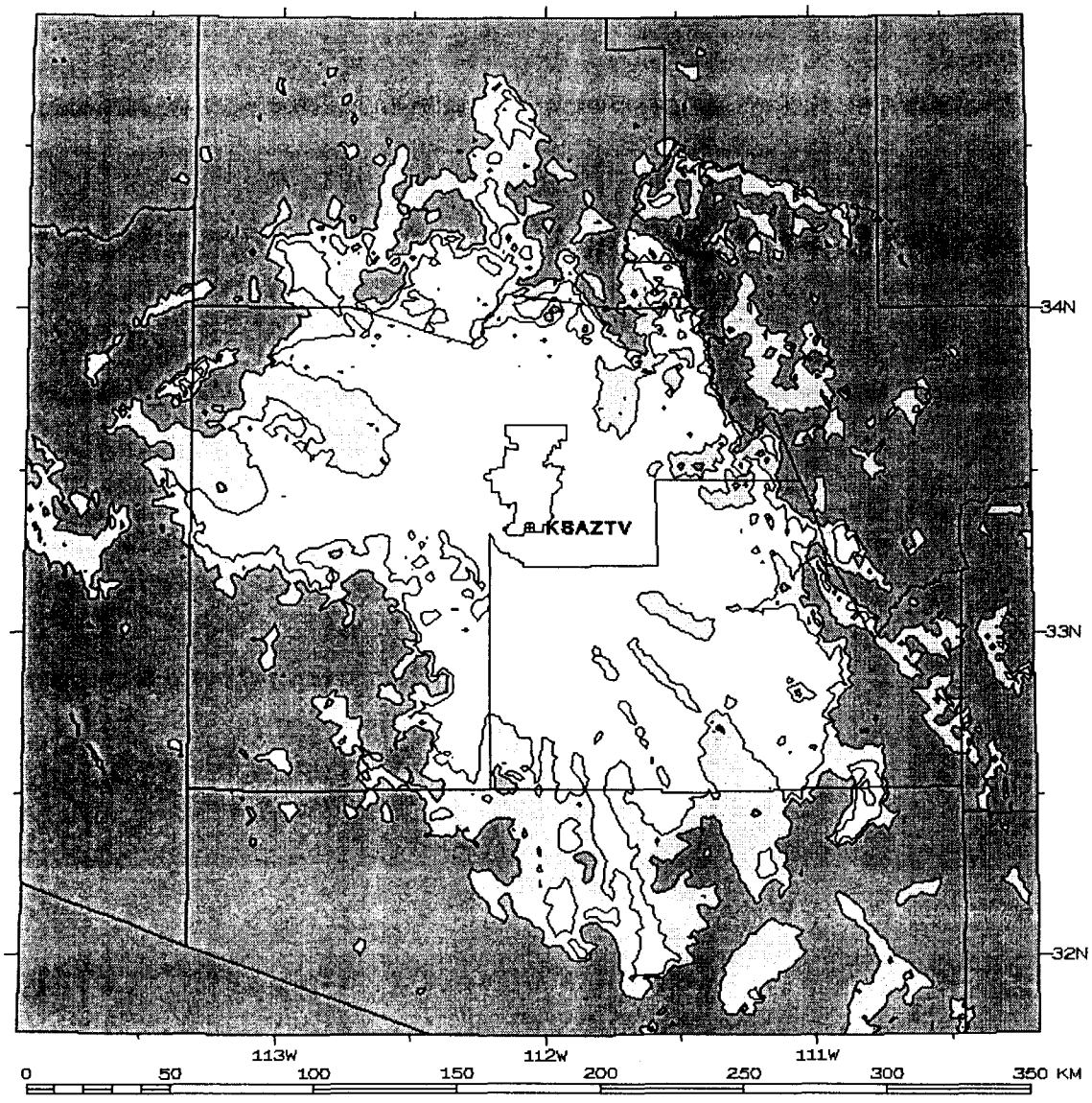
Market 17
Phoenix
KSAZ/Channel 10
Network: FOX
Longley-Rice Irregular Terrain Model

SHVA Study

Grade A
Area: 19360. sq km
Population: 2795000.
Households: 806000.

Grade B
Area: 11510. sq km
Population: 38000.
Households: 9000.

Less than grade B
Area: 91310. sq km
Population: 997000.
Households: 302000.



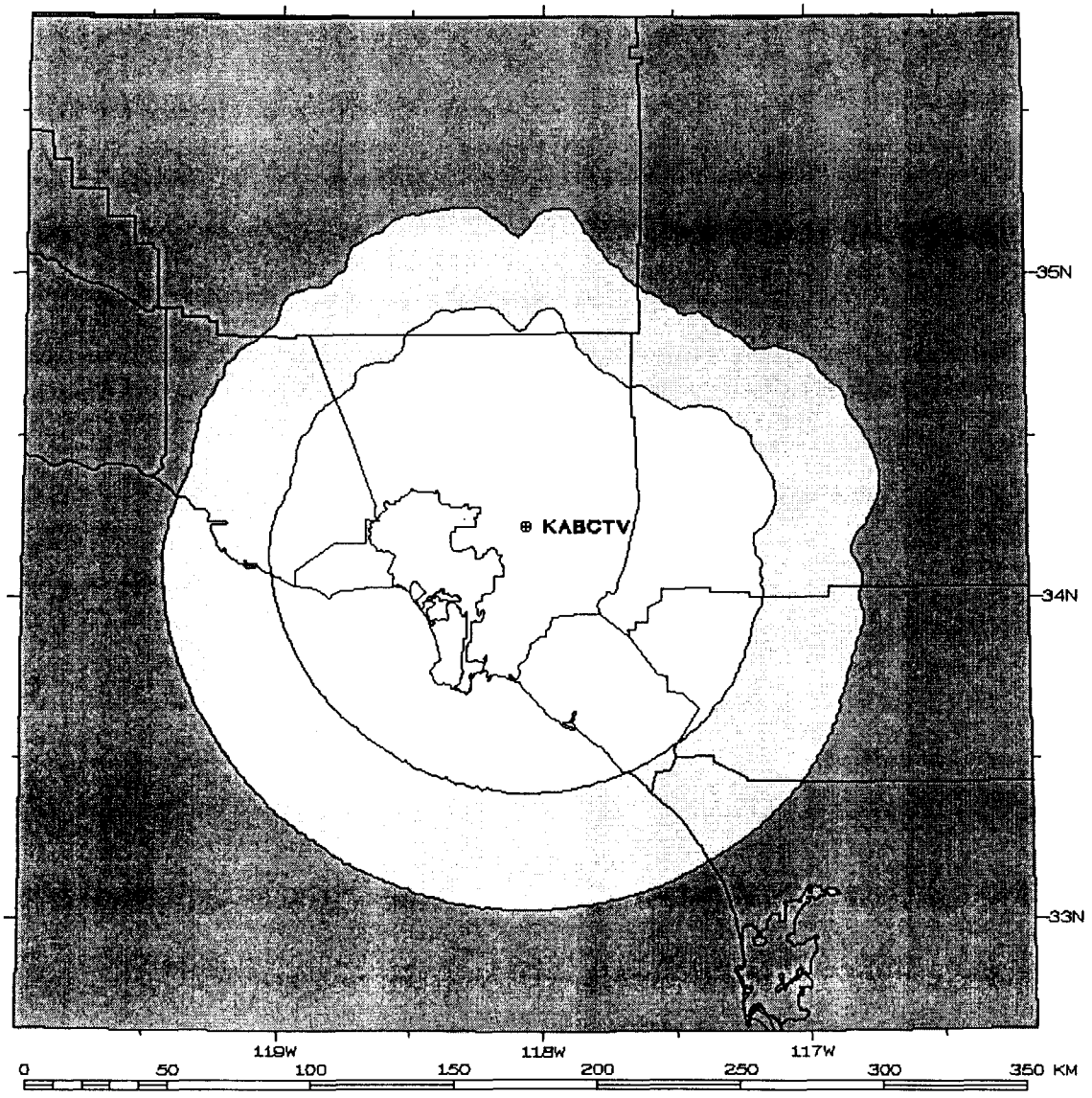
Market 17
Phoenix
KSAZ/Channel 10
Network: FOX
TIREM Model

SHVA Study

Grade A
Area: 24170. sq km
Population: 2778000.
Households: 803000.

Grade B
Area: 20250. sq km
Population: 109000.
Households: 27000.

Less than grade B
Area: 77700. sq km
Population: 942000.
Households: 287000.



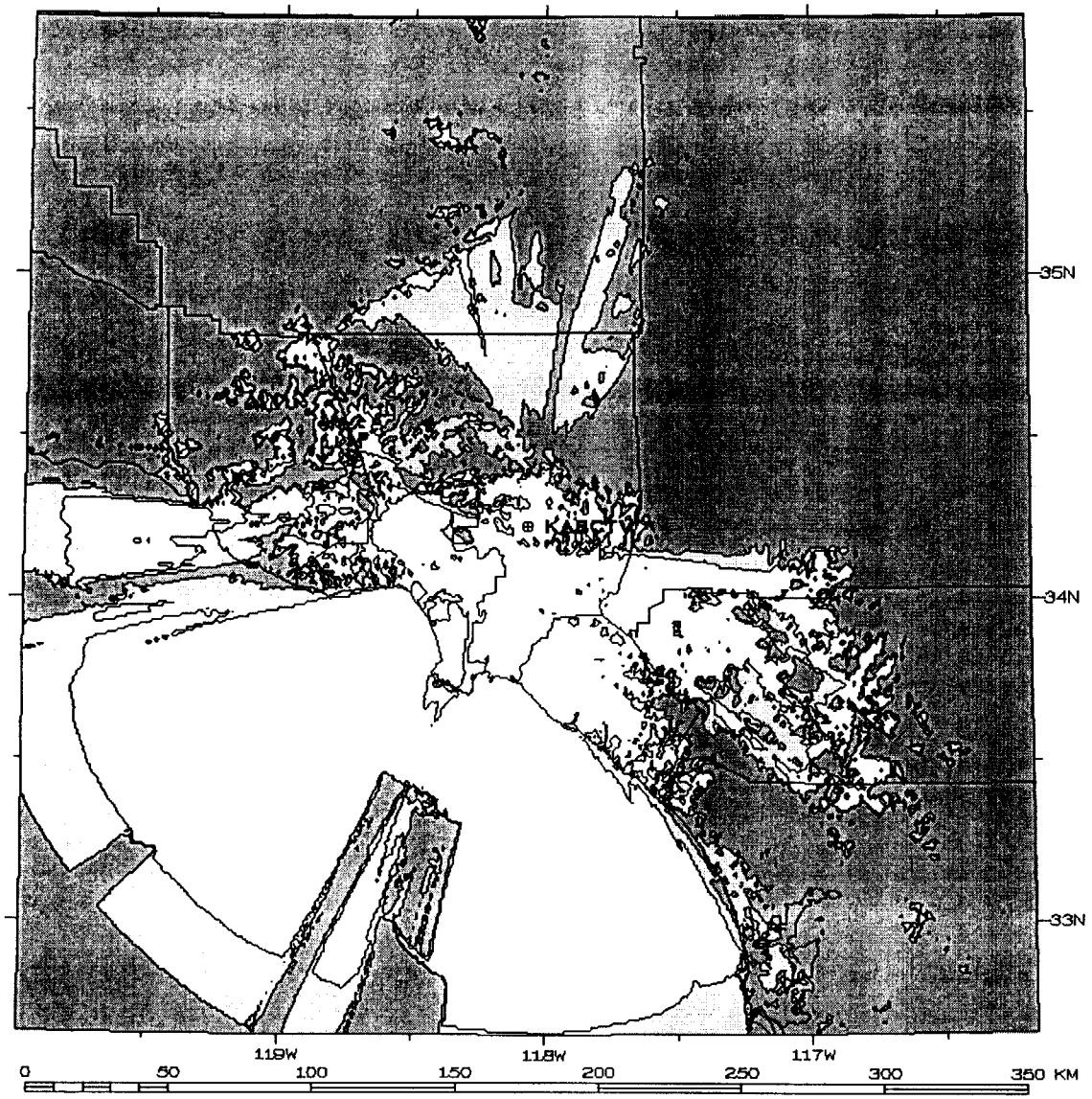
Market 2
Los Angeles
KABC/Channel 7
Network: ABC
FCC Contour Model (Grade B - 50/50)

SHVA Study

Grade A
Area: 21900. sq km
Population: 14145000.
Households: 4308000.

Grade B
Area: 23590. sq km
Population: 1187000.
Households: 319000.

Less than grade B
Area: 78510. sq km
Population: 3436000.
Households: 1062000.



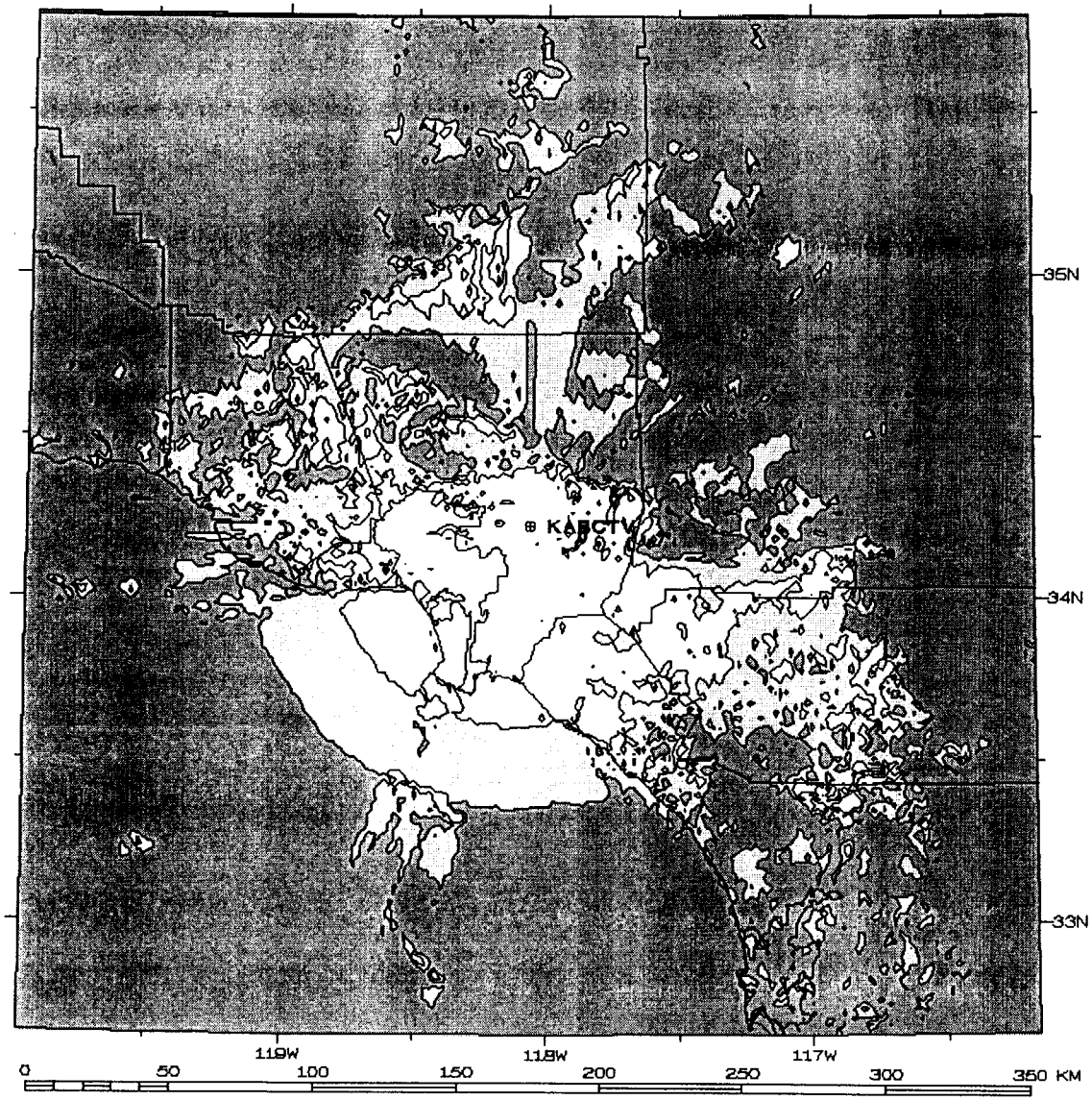
Market 2
Los Angeles
KABC/Channel 7
Network: ABC
Longley-Rice Irregular Terrain Model

SHVA Study

Grade A
Area: 32800. sq km
Population: 12848000.
Households: 3987000.

Grade B
Area: 15540. sq km
Population: 2015000.
Households: 582000.

Less than grade B
Area: 73640. sq km
Population: 3905000.
Households: 1140000.



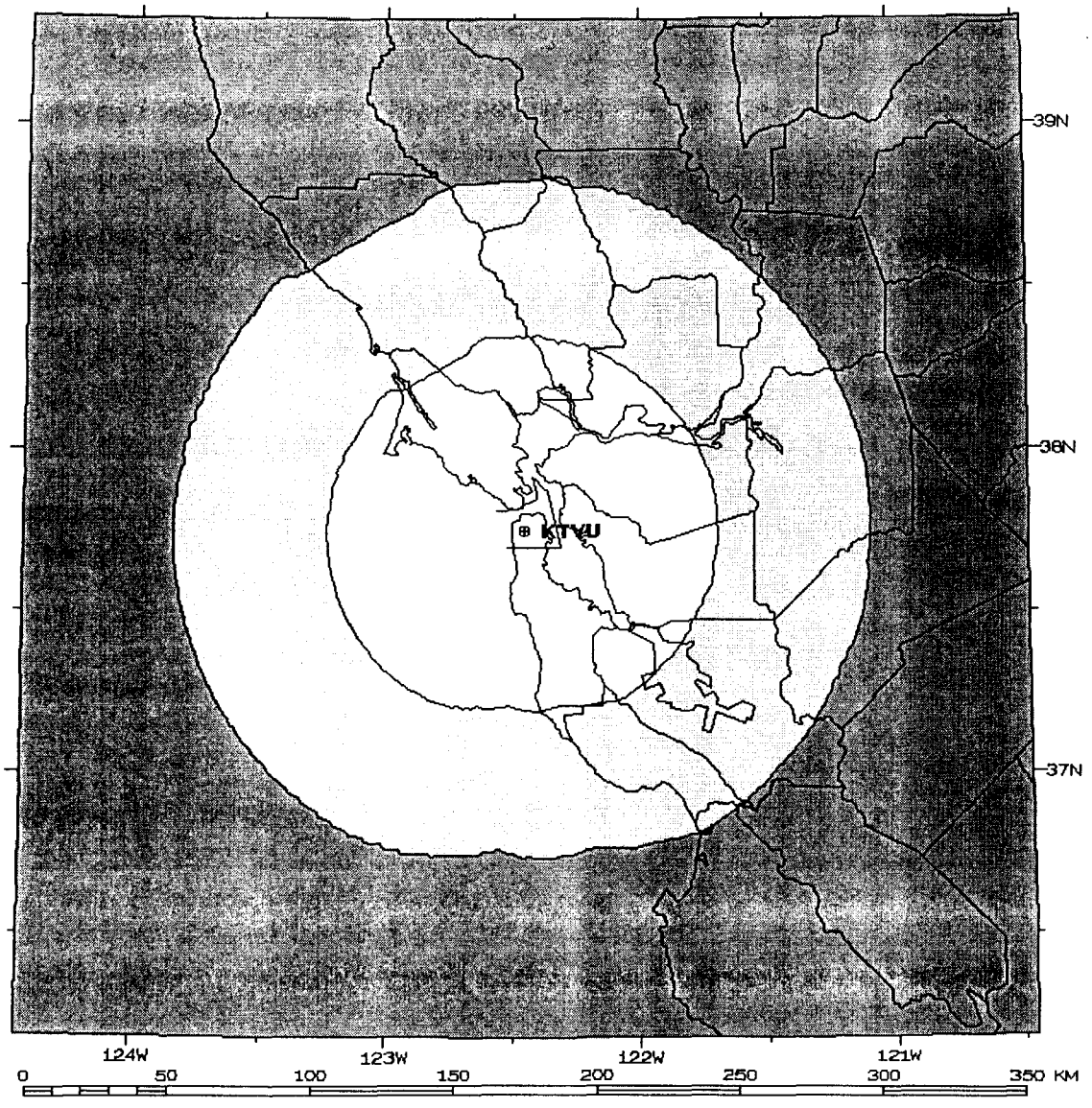
Market 2
Los Angeles
KABC/Channel 7
Network: ABC
TIREM Model

SHVA Study

Grade A
Area: 11600. sq km
Population: 11728000.
Households: 3857000.

Grade B
Area: 20750. sq km
Population: 2920000.
Households: 831000.

Less than grade B
Area: 89550. sq km
Population: 4120000.
Households: 1202000.



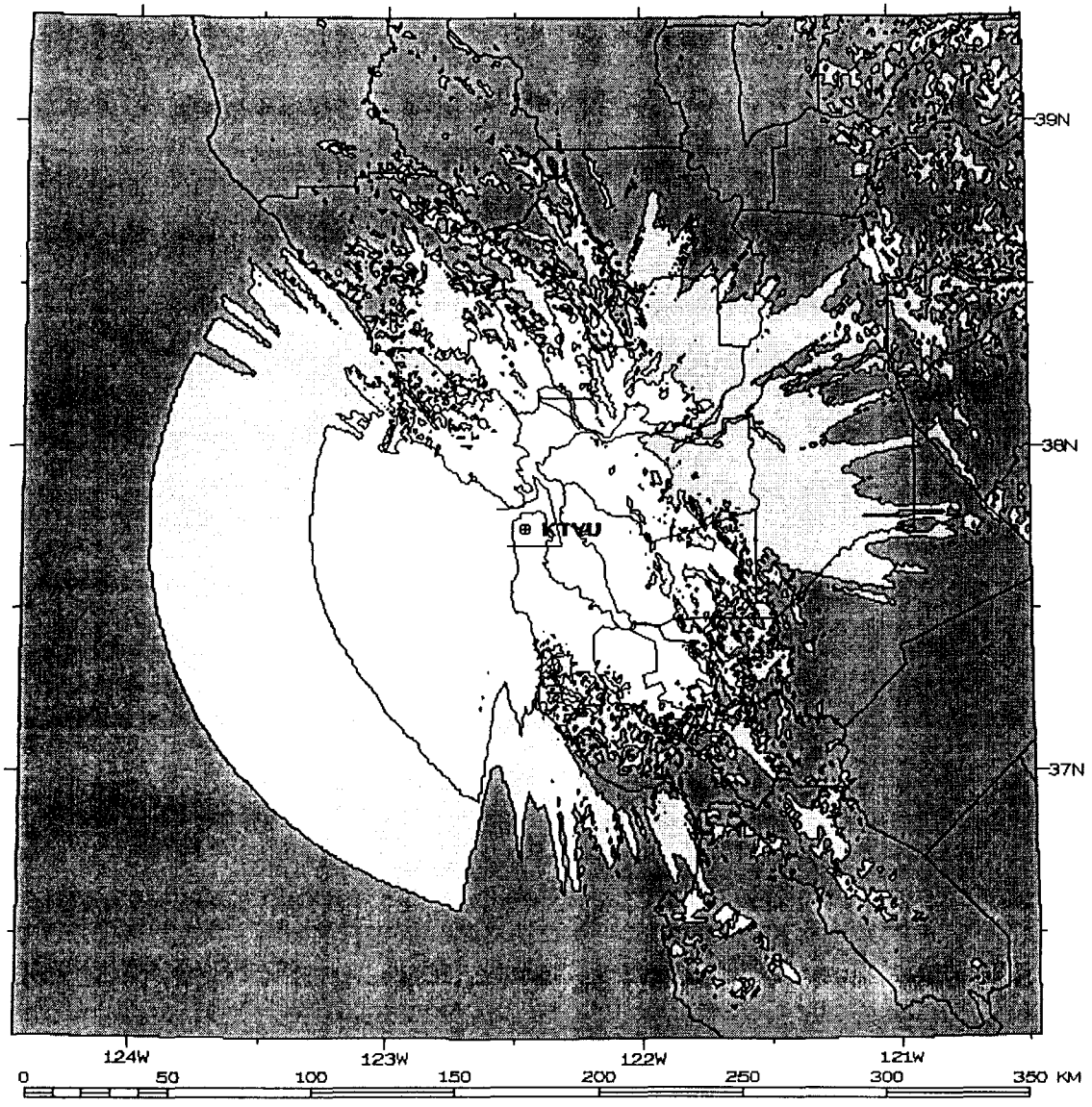
Market 5
San Francisco-Oakland-San Jose
KTVU/Channel 2
Network: FOX
FCC Contour Model (Grade B - 50/50)

SHVA Study

Grade A
Area: 13780. sq km
Population: 4963000.
Households: 1743000.

Grade B
Area: 30900. sq km
Population: 2576000.
Households: 761000.

Less than grade B
Area: 76820. sq km
Population: 2658000.
Households: 797000.



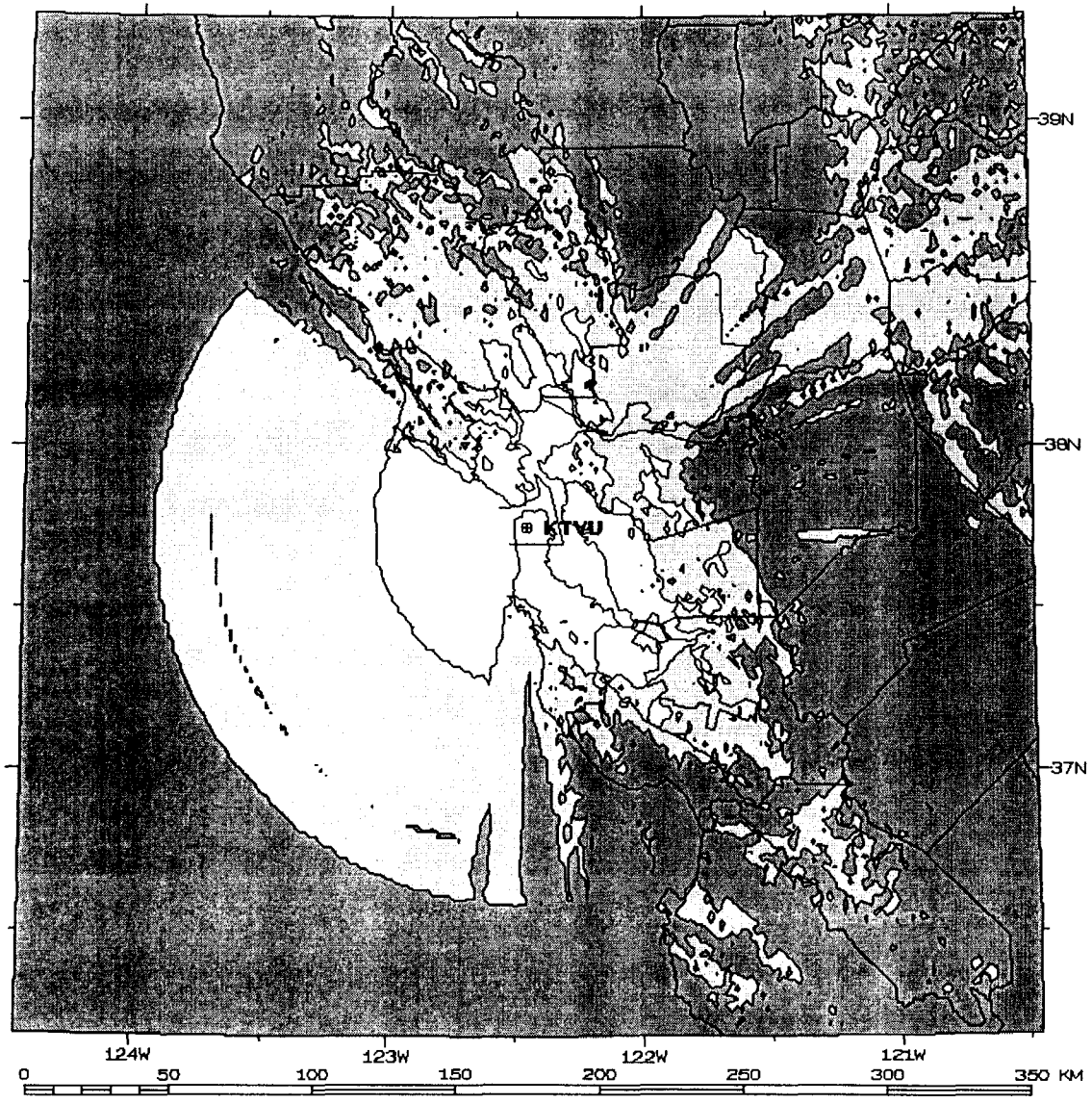
Market 6
San Francisco-Oakland-San Jose
KTVU/Channel 2
Network: FOX
Longley-Rice Irregular Terrain Model

SHVA Study

Grade A
Area: 15530. sq km
Population: 5519000.
Households: 1908000.

Grade B
Area: 29940. sq km
Population: 1799000.
Households: 516000.

Less than grade B
Area: 76050. sq km
Population: 2878000.
Households: 876000.



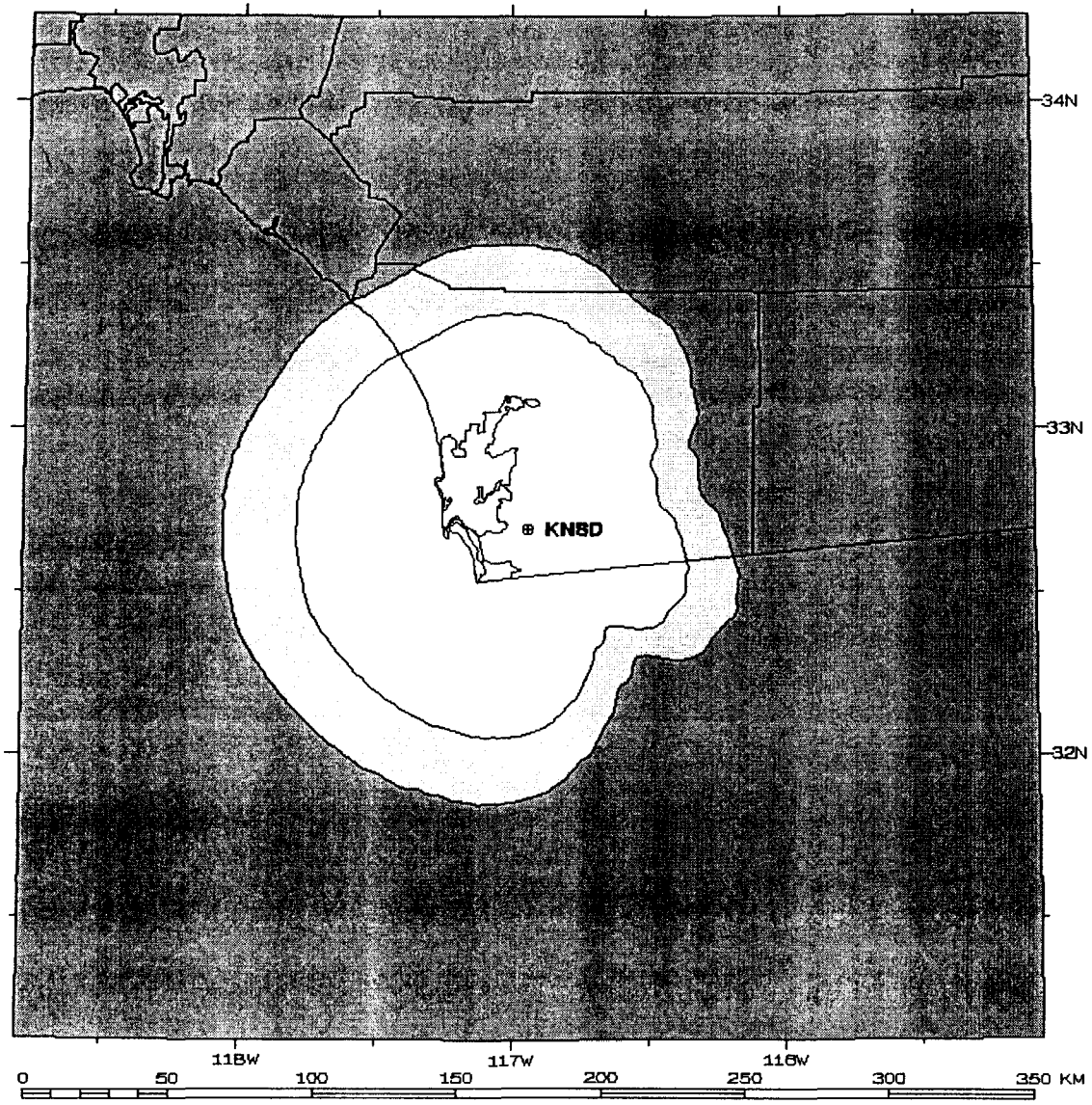
Market 5
San Francisco-Oakland-San Jose
KTVU/Channel 2
Network: FOX
TIREM Model

SHVA Study

Grade A
Area: 8300. sq km
Population: 4045000.
Households: 1449000.

Grade B
Area: 37800. sq km
Population: 3122000.
Households: 954000.

Less than grade B
Area: 75440. sq km
Population: 3030000.
Households: 898000.



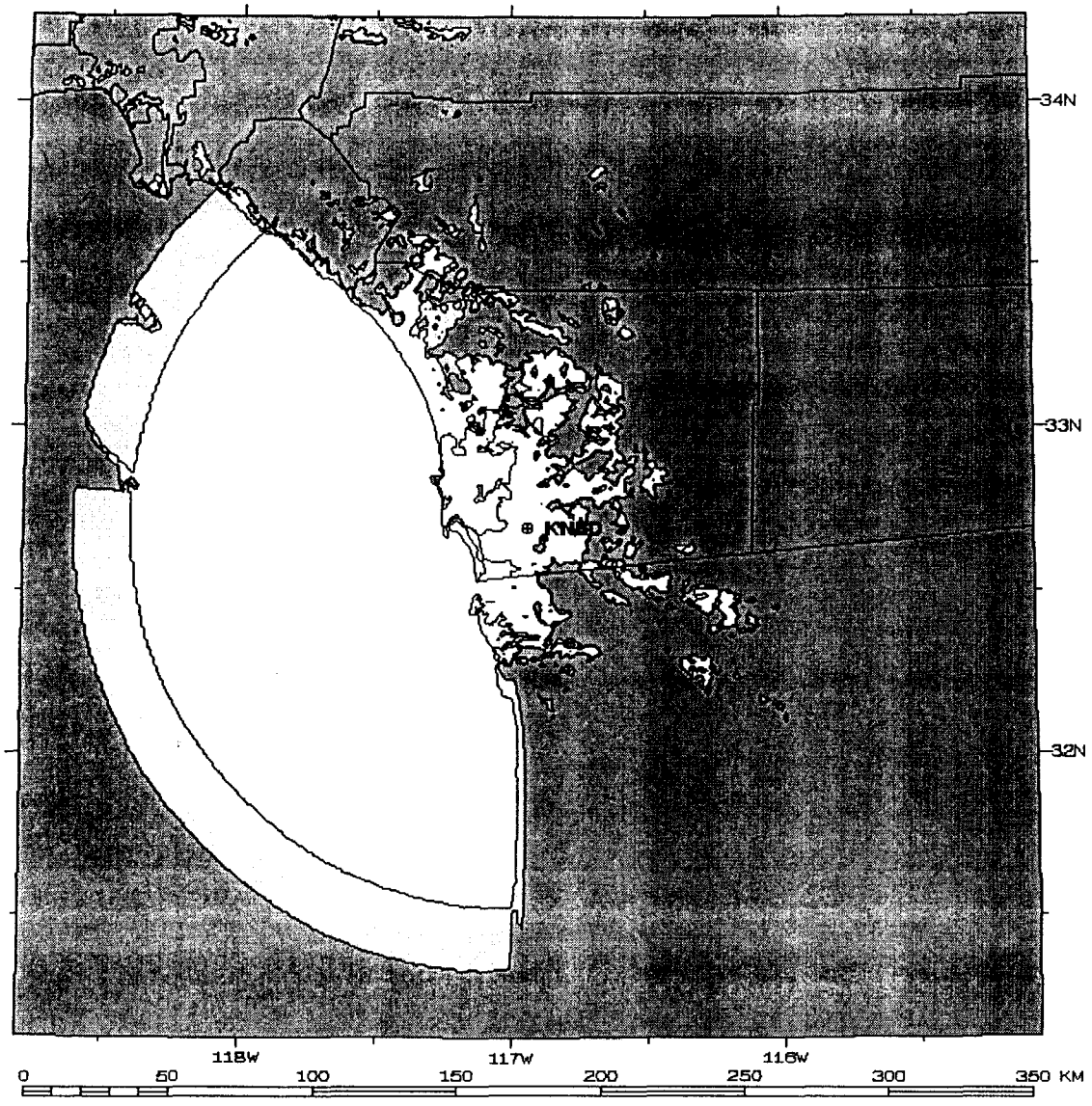
Market 26
San Diego
KNSD/Channel 39
Network: NBC
FCC Contour Model (Grade B - 50/50)

SHVA Study

Grade A
Area: 14420. sq km
Population: 2632000.
Households: 827000.

Grade B
Area: 10580. sq km
Population: 121000.
Households: 24000.

Less than grade B
Area: 98480. sq km
Population: 14060000.
Households: 4291000.



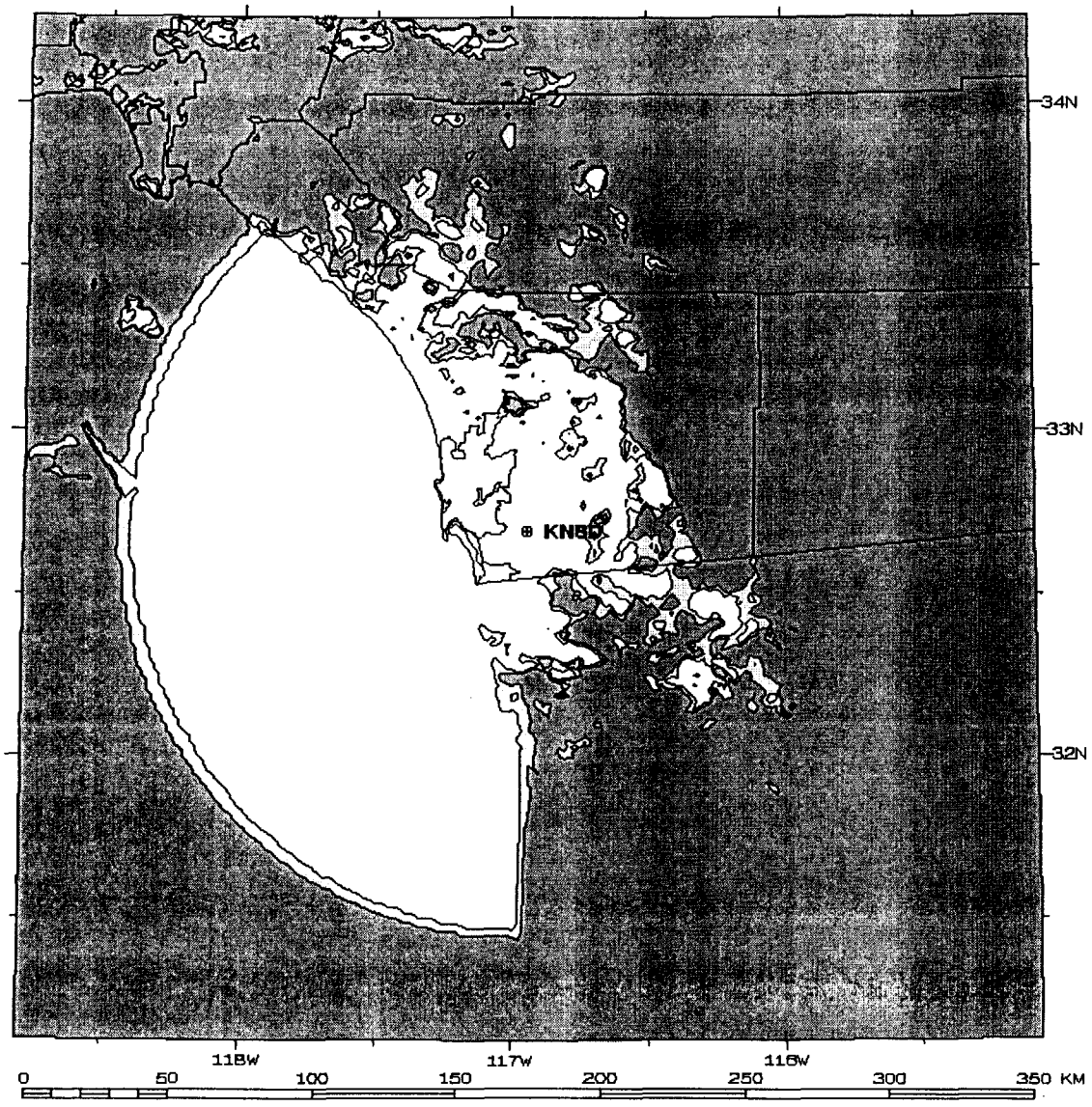
Market 26
San Diego
KNSD/Channel 39
Network: NBC
Longley-Rice Irregular Terrain Model

SHVA Study

Grade A
Area: 25980. sq km
Population: 2608000.
Households: 831000.

Grade B
Area: 8990. sq km
Population: 575000.
Households: 195000.

Less than grade B
Area: 86900. sq km
Population: 13631000.
Households: 4117000.



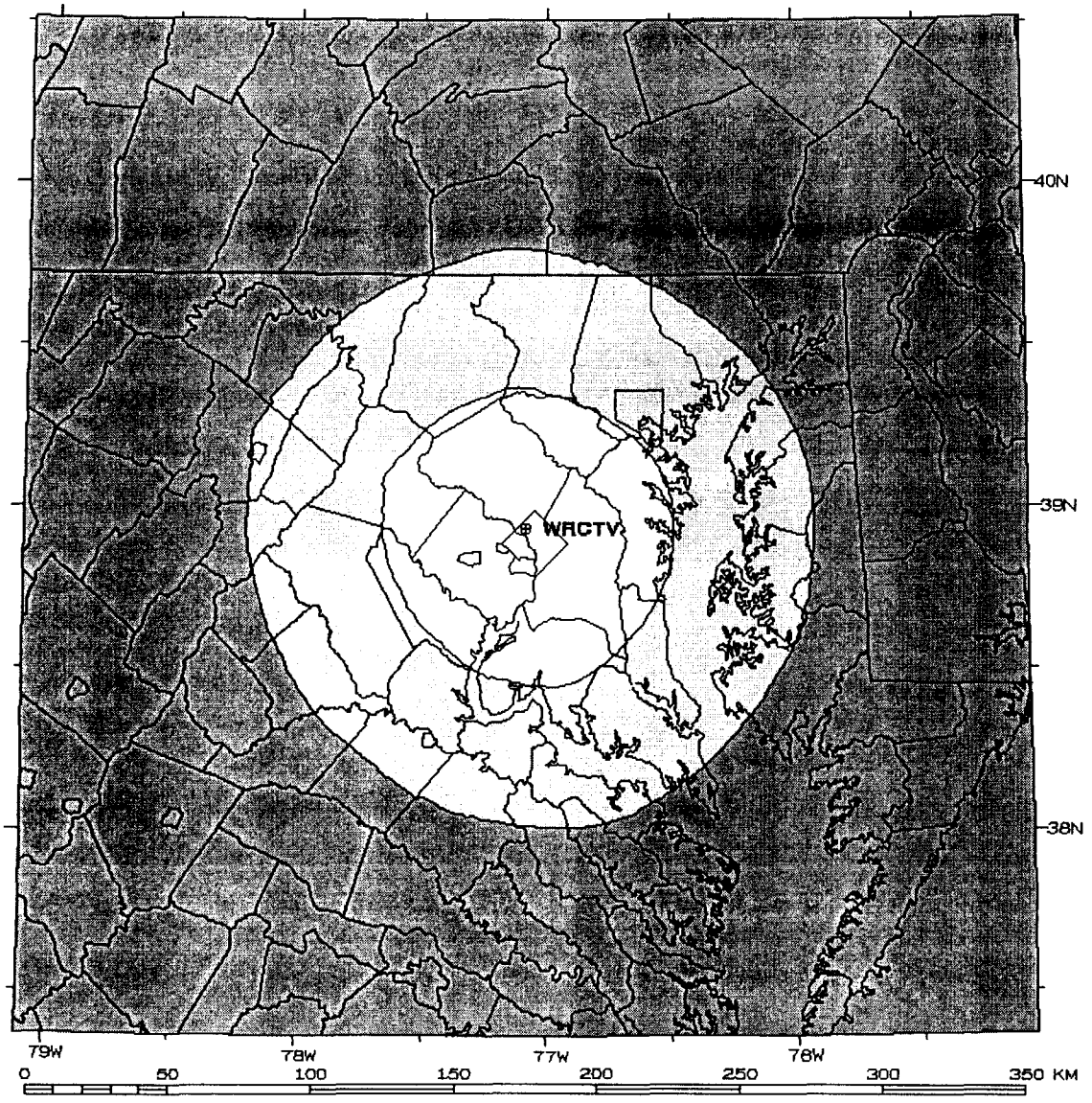
Market 26
San Diego
KNSD/Channel 39
Network: NBC
TIREM Model

SHVA Study

Grade A
Area: 29440. sq km
Population: 2834000.
Households: 899000.

Grade B
Area: 8090. sq km
Population: 592000.
Households: 183000.

Less than grade B
Area: 86340. sq km
Population: 13388000.
Households: 4061000.



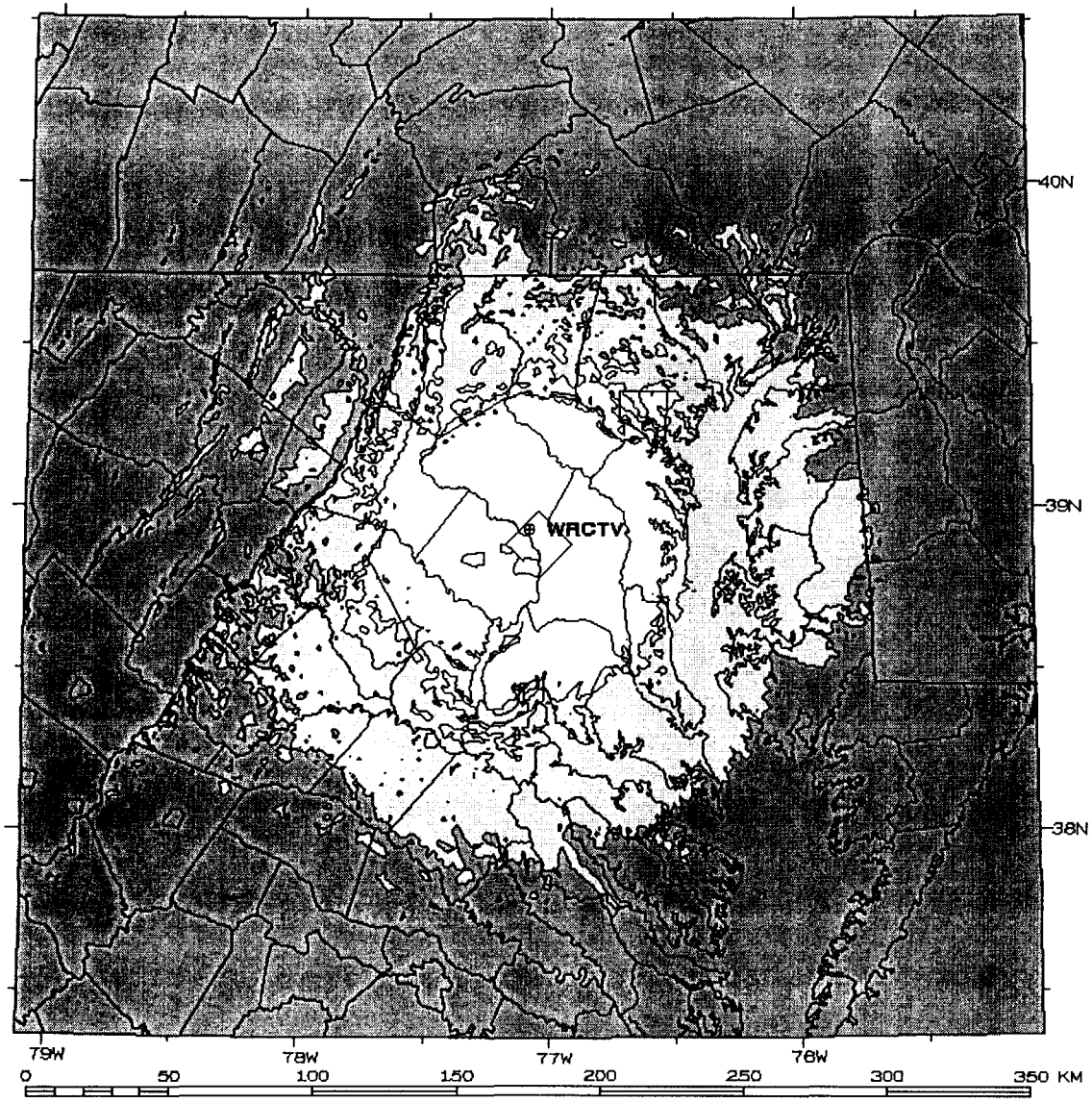
Market 7
Washington, D.C.
WRC /Channel 4
Network: NBC
FCC Contour Model (Grade B - 50/50)

SHVA Study

Grade A
Area: 8010. sq km
Population: 4532000.
Households: 1454000.

Grade B
Area: 22450. sq km
Population: 2743000.
Households: 870000.

Less than grade B
Area: 91300. sq km
Population: 8888000.
Households: 2840000.



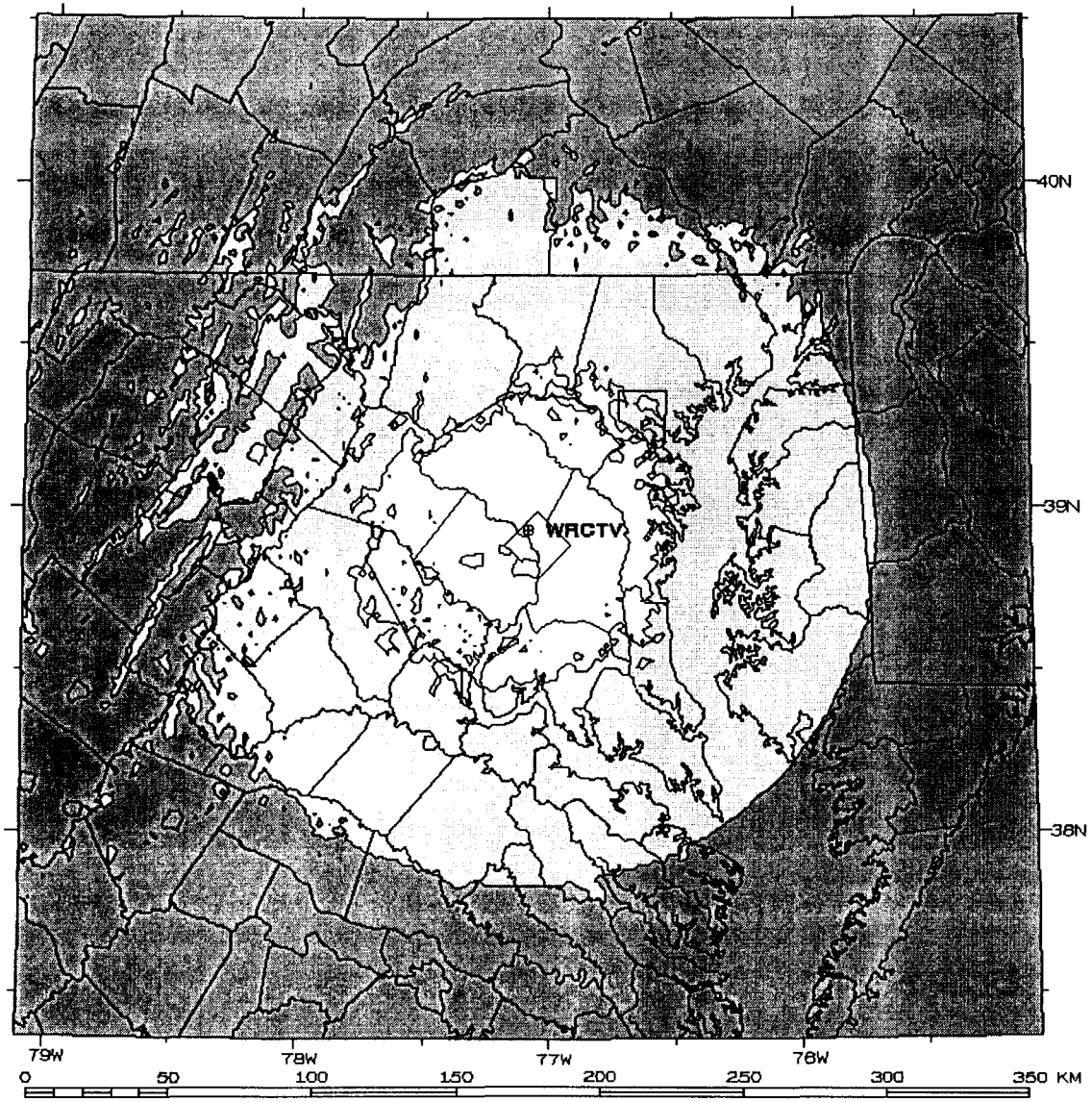
Market 7
Washington, D.C.
WRC /Channel 4
Network: NBC
Longley-Rice Irregular Terrain Model

SHVA Study

Grade A
Area: 11070. sq km
Population: 5408000.
Households: 1768000.

Grade B
Area: 22410. sq km
Population: 1814000.
Households: 541000.

Less than grade B
Area: 88410. sq km
Population: 8739000.
Households: 2855000.



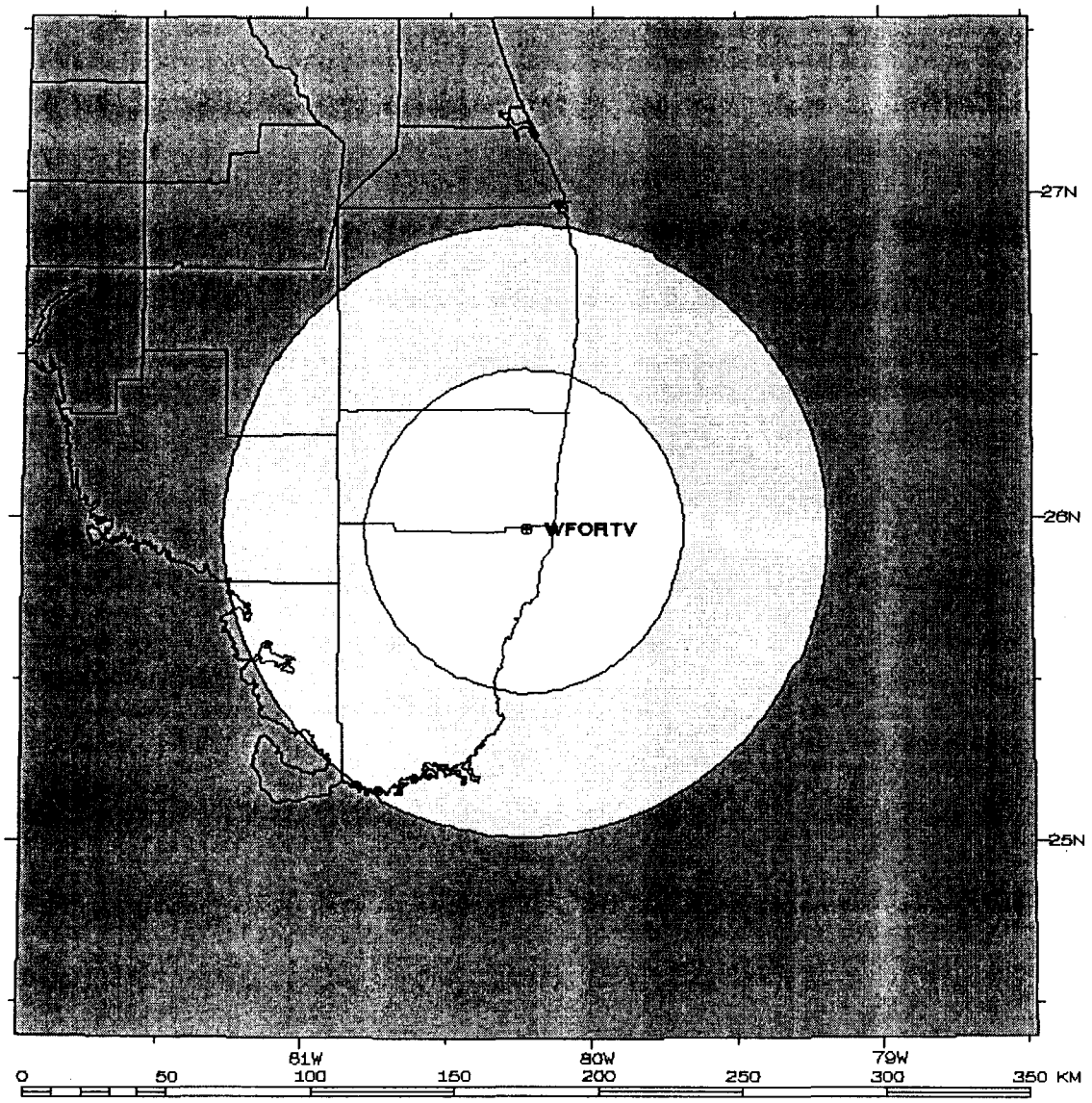
Market 7
Washington, D.C.
WRC /Channel 4
Network: NBC
TIREM Model

SHVA Study

Grade A
Area: 8160. sq km
Population: 4682000.
Households: 1528000.

Grade B
Area: 37050. sq km
Population: 3141000.
Households: 955000.

Less than grade B
Area: 77040. sq km
Population: 8139000.
Households: 2681000.



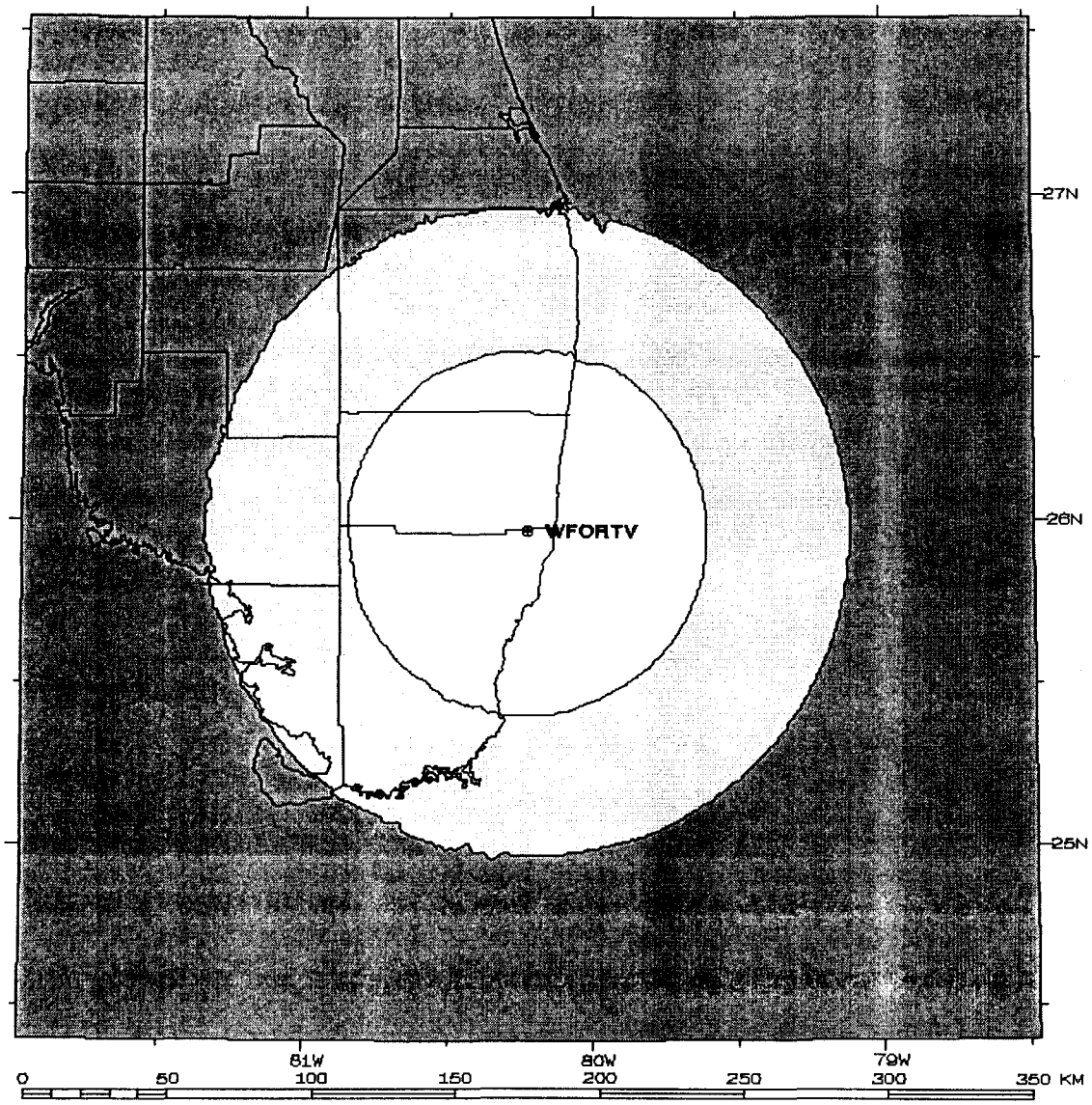
Market 16
Miami-Ft. Lauderdale
WFOR/Channel 4
Network: CBS
FCC Contour Model (Grade B - 50/50)

SHVA Study

Grade A
Area: 9500. sq km
Population: 3663000.
Households: 1197000.

Grade B
Area: 24760. sq km
Population: 826000.
Households: 280000.

Less than grade B
Area: 87740. sq km
Population: 1115000.
Households: 346000.



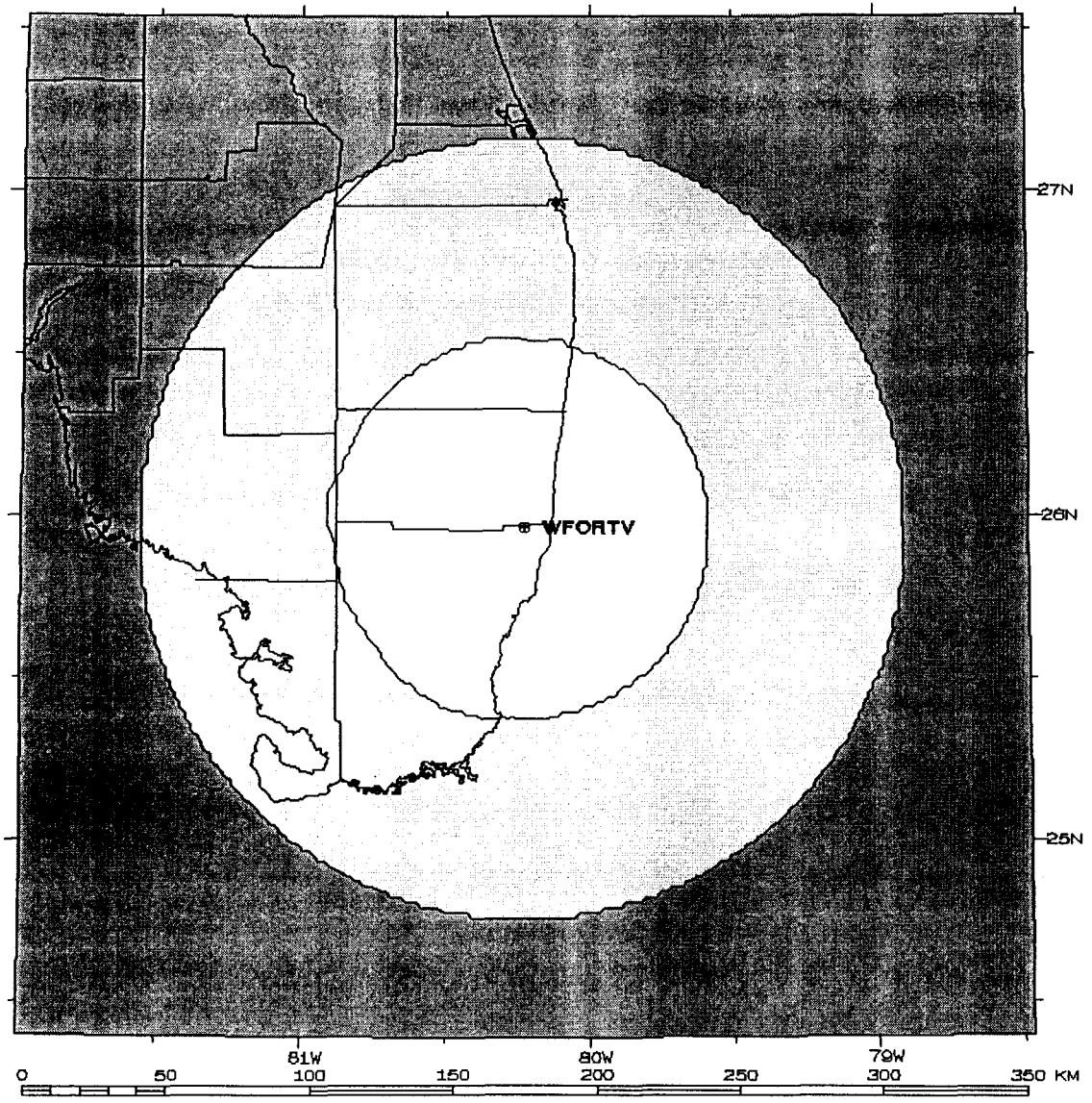
Market 16
Miami-Ft. Lauderdale
WFOR/Channel 4
Network: CBS
Longley-Rice Irregular Terrain Model

SHVA Study

Grade A
Area: 12200. sq km
Population: 3819000.
Households: 1249000.

Grade B
Area: 26570. sq km
Population: 736000.
Households: 228000.

Less than grade B
Area: 83350. sq km
Population: 1049000.
Households: 327000.



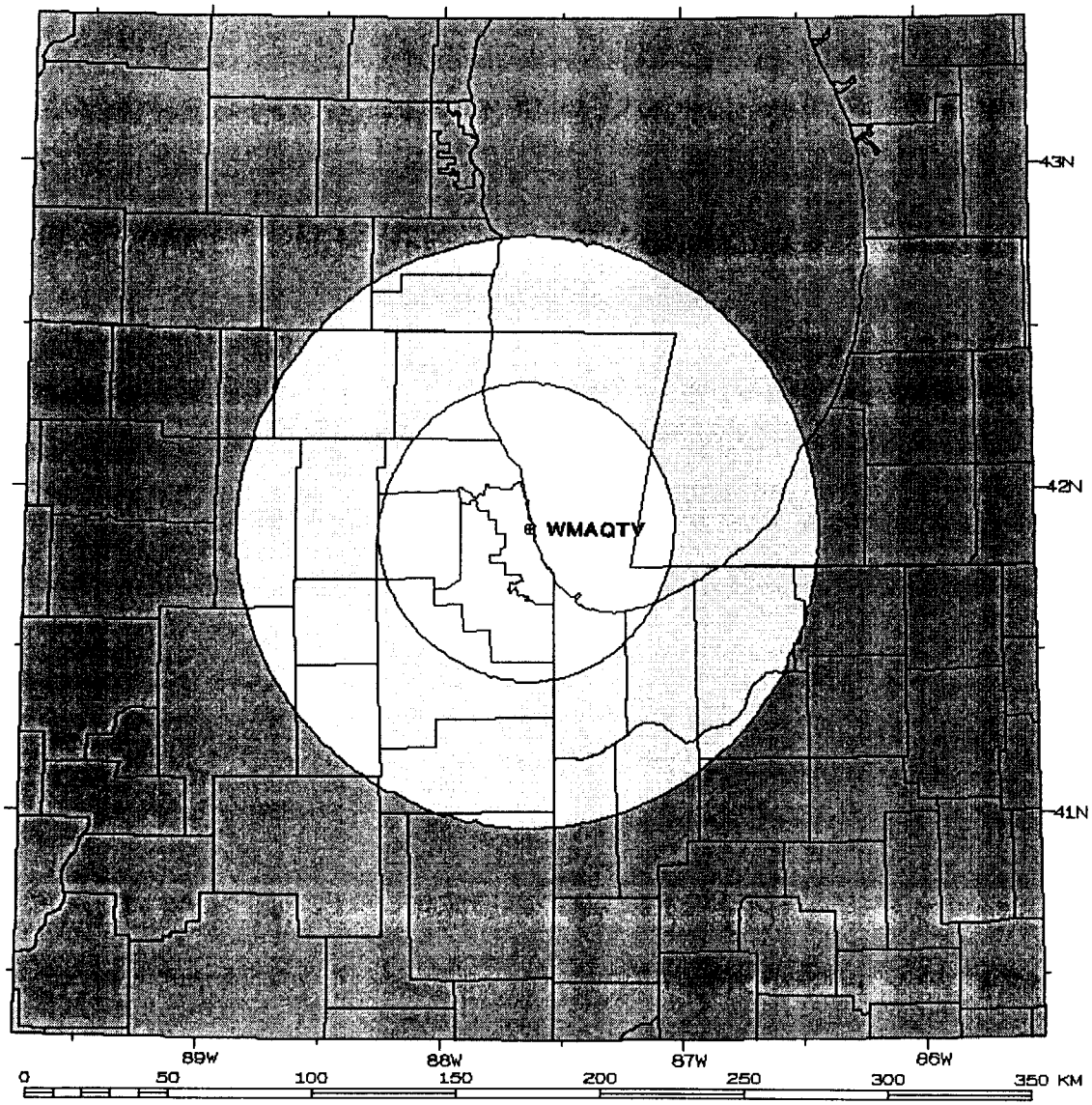
Market 16
Miami-Ft. Lauderdale
WFOR/Channel 4
Network: CBS
TIREM Model

SHVA Study

Grade A
Area: 13500. sq km
Population: 3857000.
Households: 1263000.

Grade B
Area: 42630. sq km
Population: 805000.
Households: 243000.

Less than grade B
Area: 66140. sq km
Population: 943000.
Households: 297000.



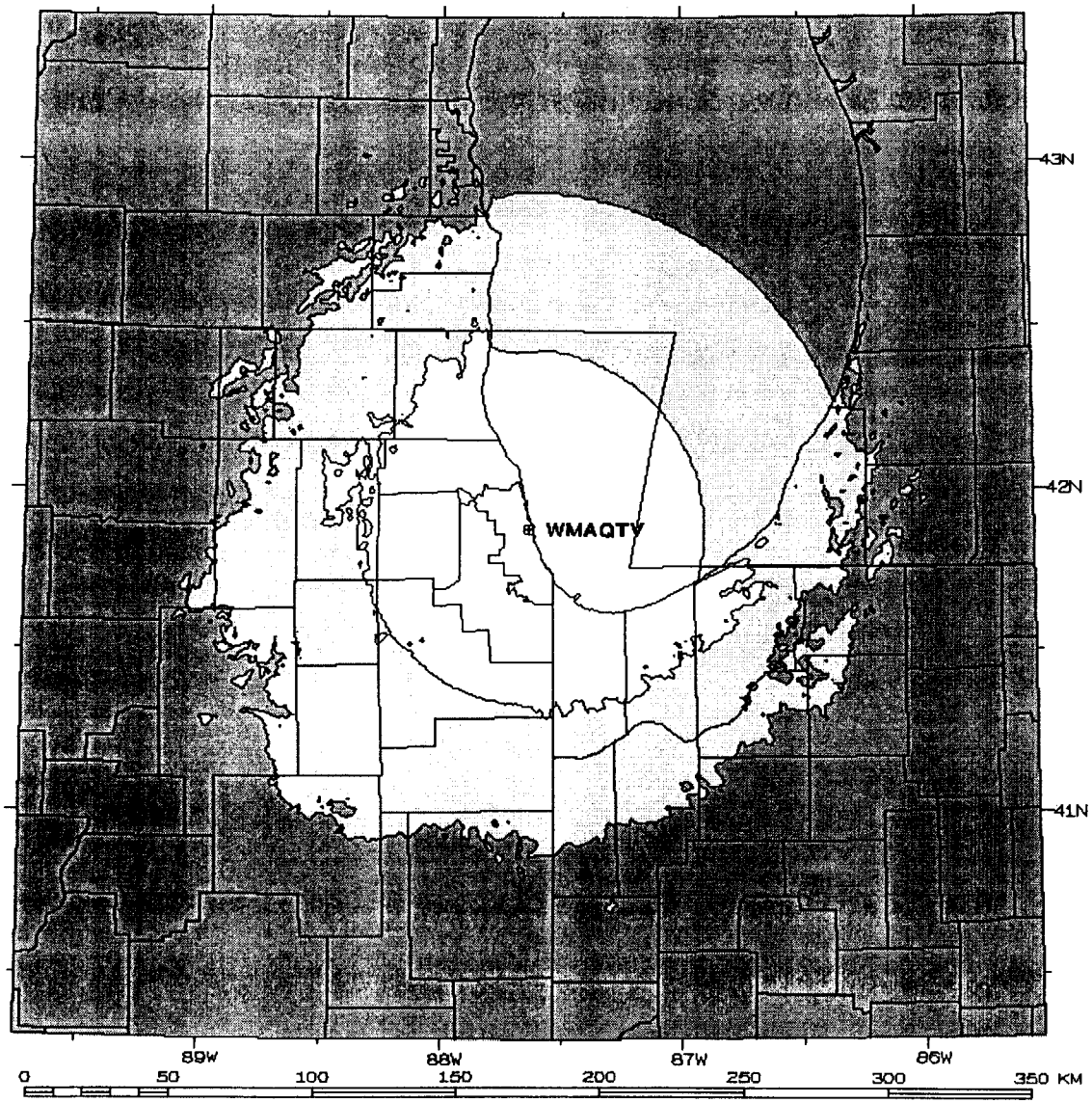
Market 3
Chicago
WMAQ/Channel 5
Network: NBC
FCC Contour Model (Grade B - 50/50)

SHVA Study

Grade A
Area: 8140. sq km
Population: 6753000.
Households: 2380000.

Grade B
Area: 23820. sq km
Population: 2216000.
Households: 817000.

Less than grade B
Area: 91180. sq km
Population: 6045000.
Households: 1980000.



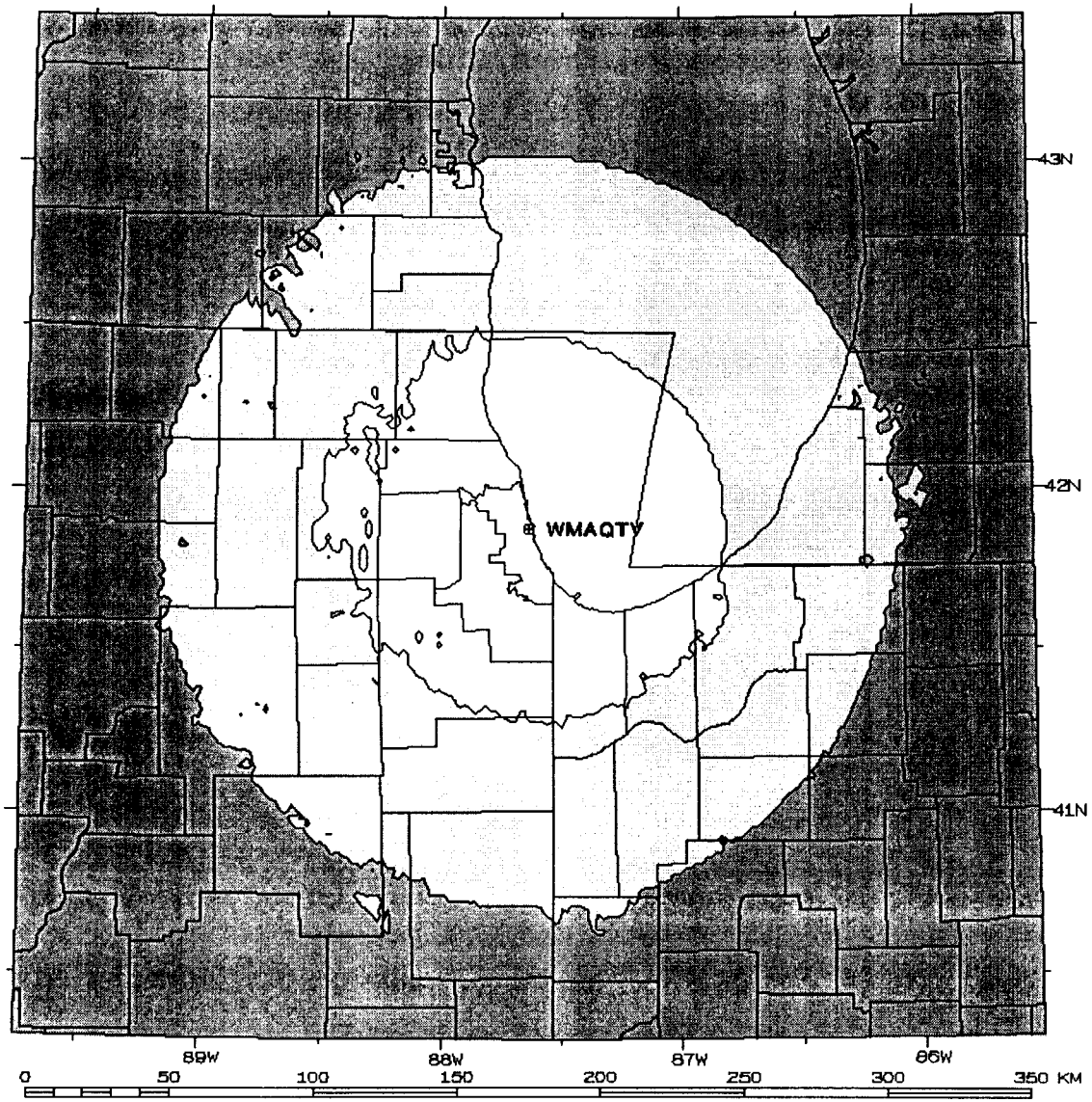
Market 3
Chicago
WMAQ/Channel 5
Network: NBC
Longley-Rice Irregular Terrain Model

SHVA Study

Grade A
Area: 12580. sq km
Population: 7673000.
Households: 2628000.

Grade B
Area: 26000. sq km
Population: 1495000.
Households: 430000.

Less than grade B
Area: 84270. sq km
Population: 5845000.
Households: 1918000.



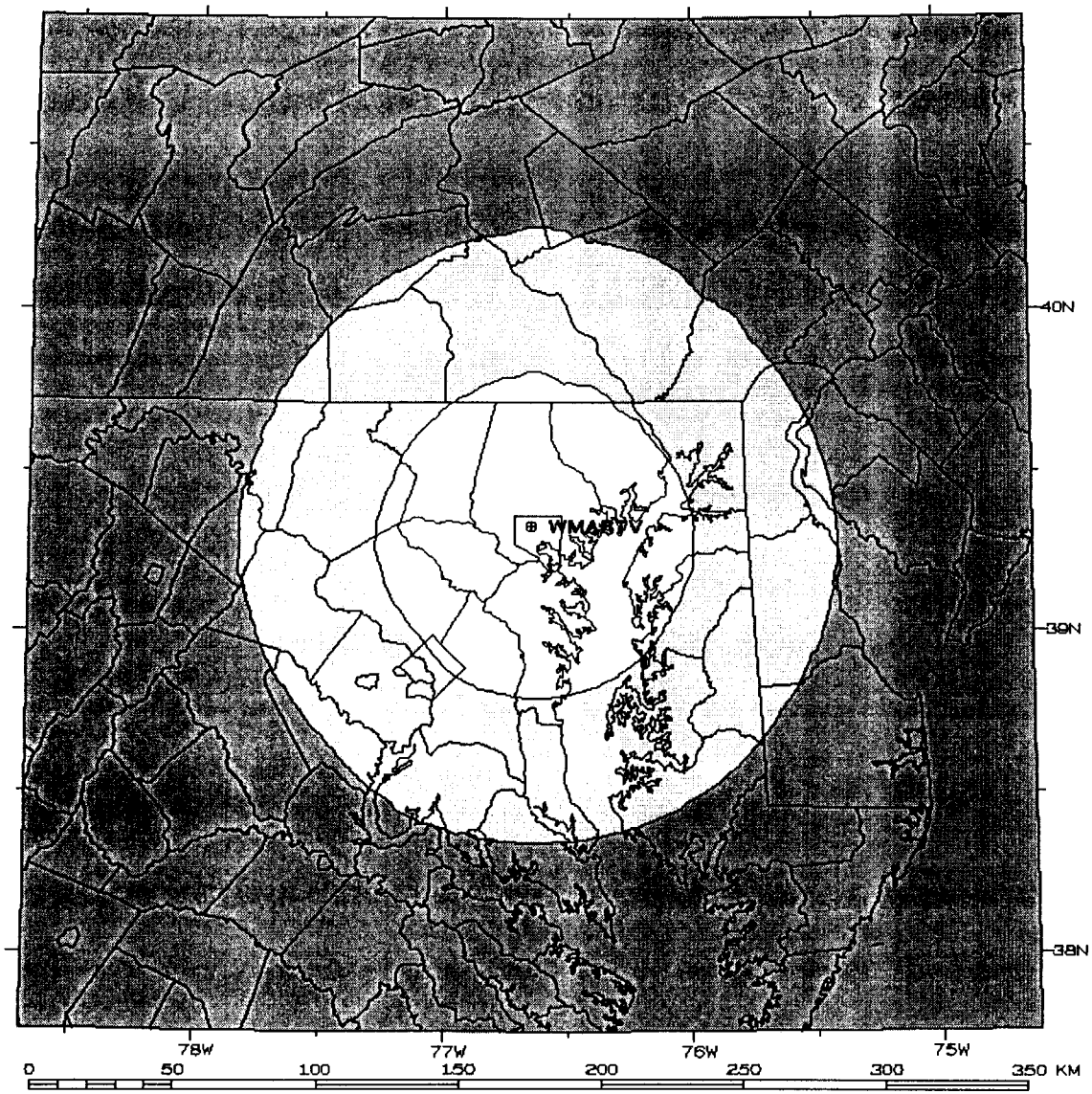
Market 3
Chicago
WMAQ/Channel 5
Network: NBC
TIREM Model

SHVA Study

Grade A
Area: 14150. sq km
Population: 7872000.
Households: 2878000.

Grade B
Area: 37390. sq km
Population: 2302000.
Households: 726000.

Less than grade B
Area: 70750. sq km
Population: 4840000.
Households: 1573000.



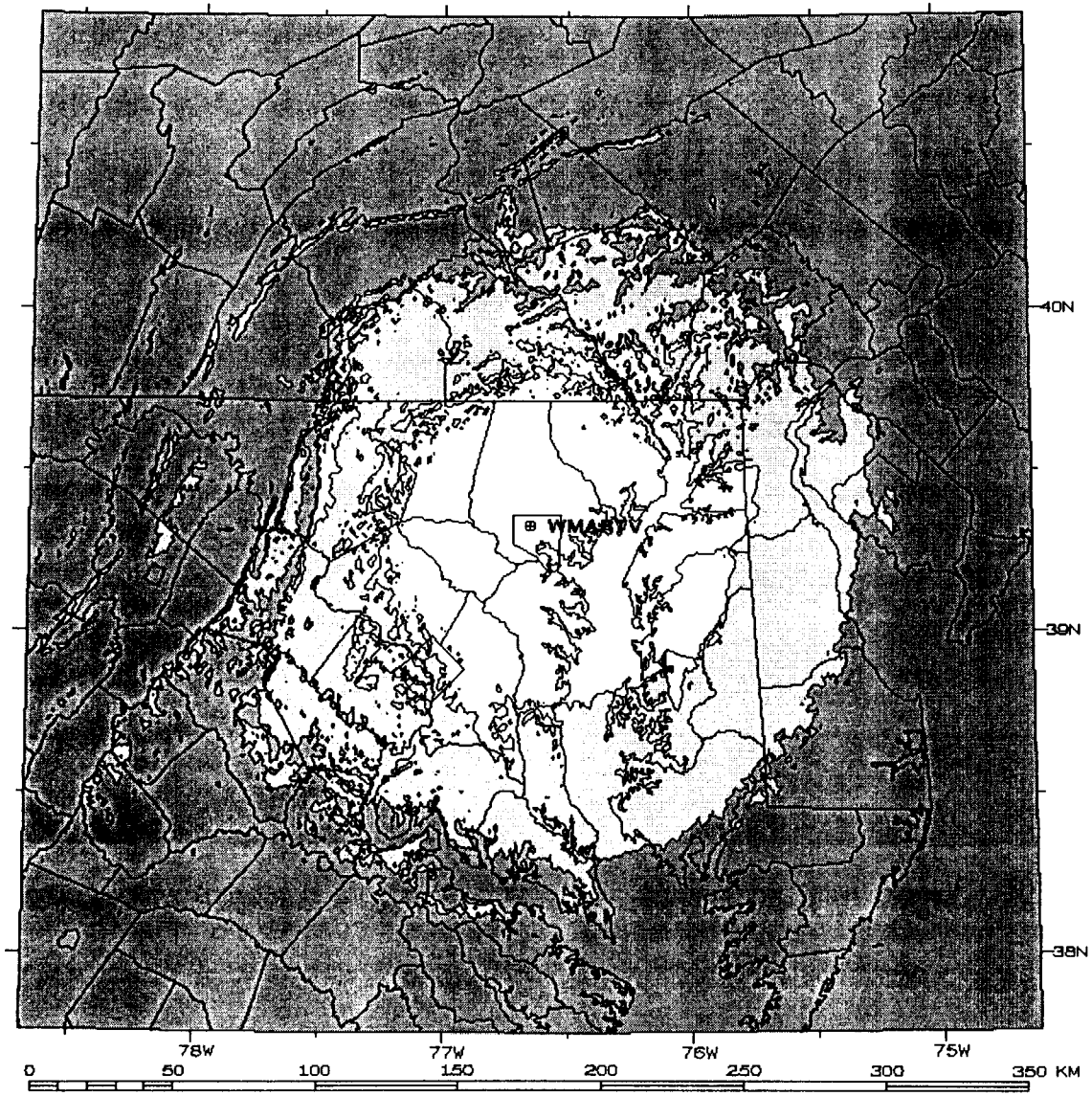
Market 23
Baltimore
WMAR/Channel 2
Network: ABC
FCC Contour Model (Grade B - 50/50)

SHVA Study

Grade A
Area: 9470. sq km
Population: 3742000.
Households: 1242000.

Grade B
Area: 24560. sq km
Population: 4661000.
Households: 1444000.

Less than grade B
Area: 87960. sq km
Population: 9616000.
Households: 3140000.



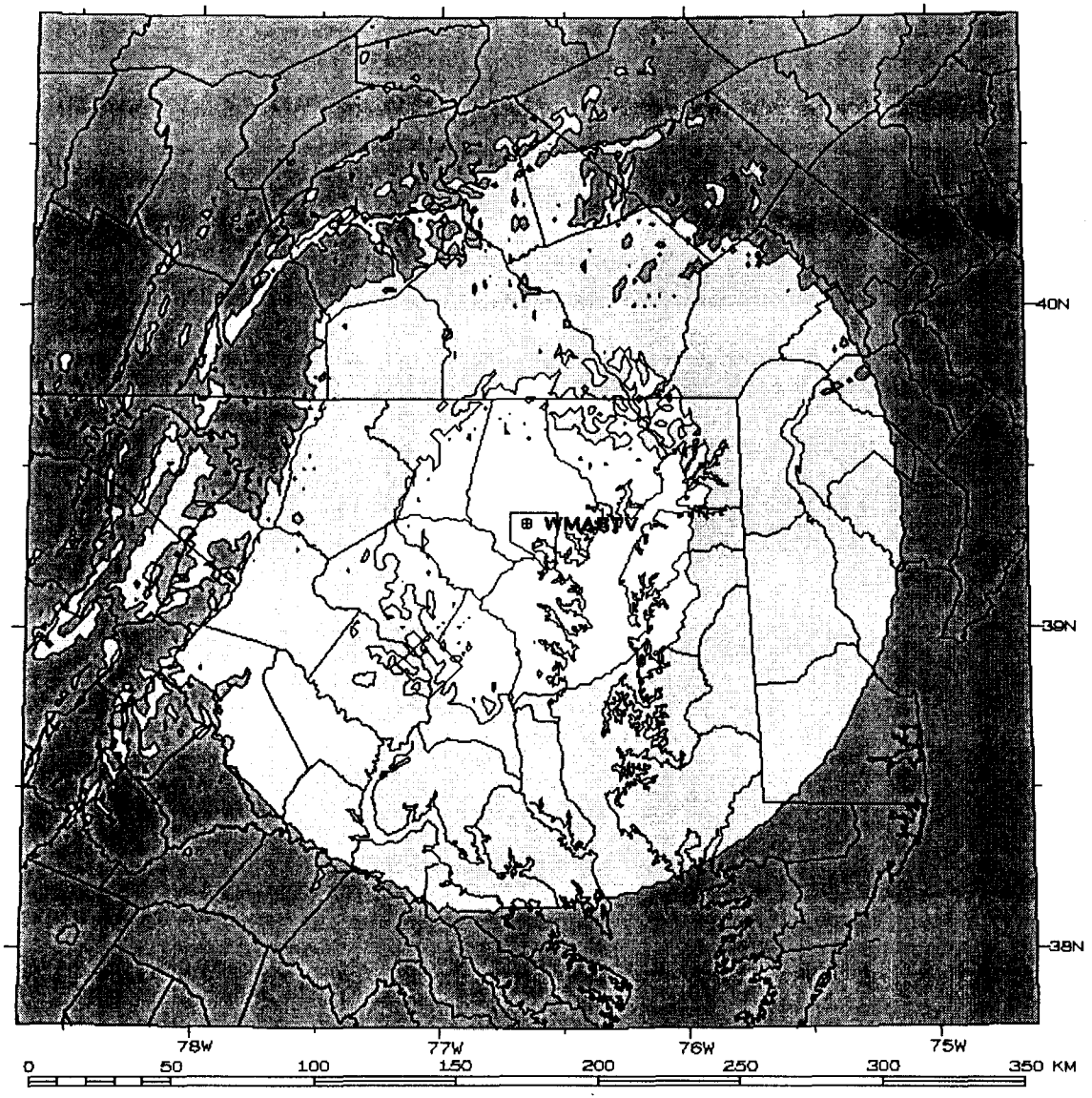
Market 23
Baltimore
WMAR/Channel 2
Network: ABC
Longley-Rice Irregular Terrain Model

SHVA Study

Grade A
Area: 13190. sq km
Population: 4574000.
Households: 1537000.

Grade B
Area: 23270. sq km
Population: 3838000.
Households: 1148000.

Less than grade B
Area: 85560. sq km
Population: 9607000.
Households: 3142000.



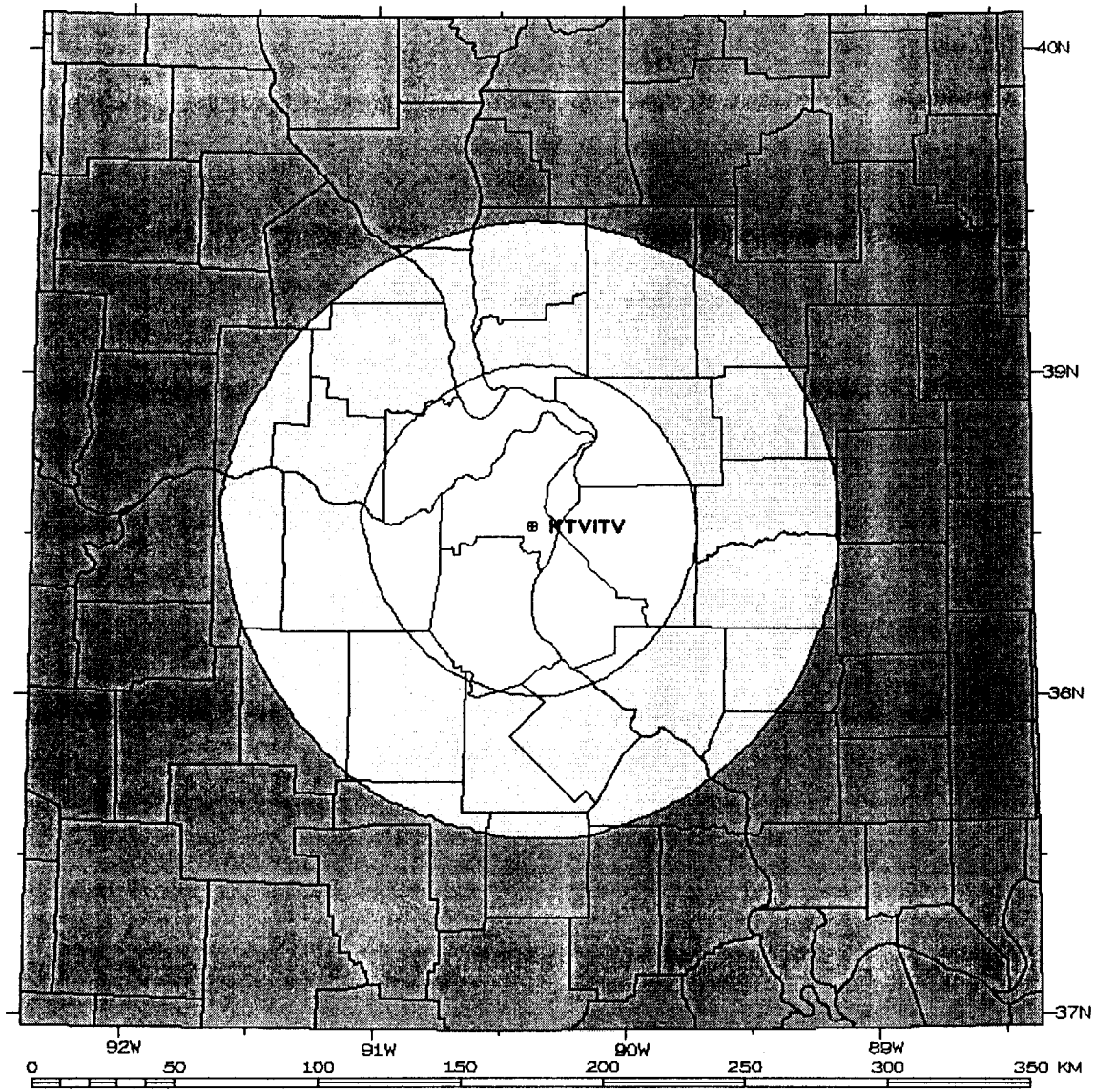
Market 23
Baltimore
WMAR/Channel 2
Network: ABC
TIREM Model

SHVA Study

Grade A
Area: 9350. sq km
Population: 3809000.
Households: 1293000.

Grade B
Area: 41240. sq km
Population: 6068000.
Households: 1837000.

Less than grade B
Area: 71420. sq km
Population: 8142000.
Households: 2697000.



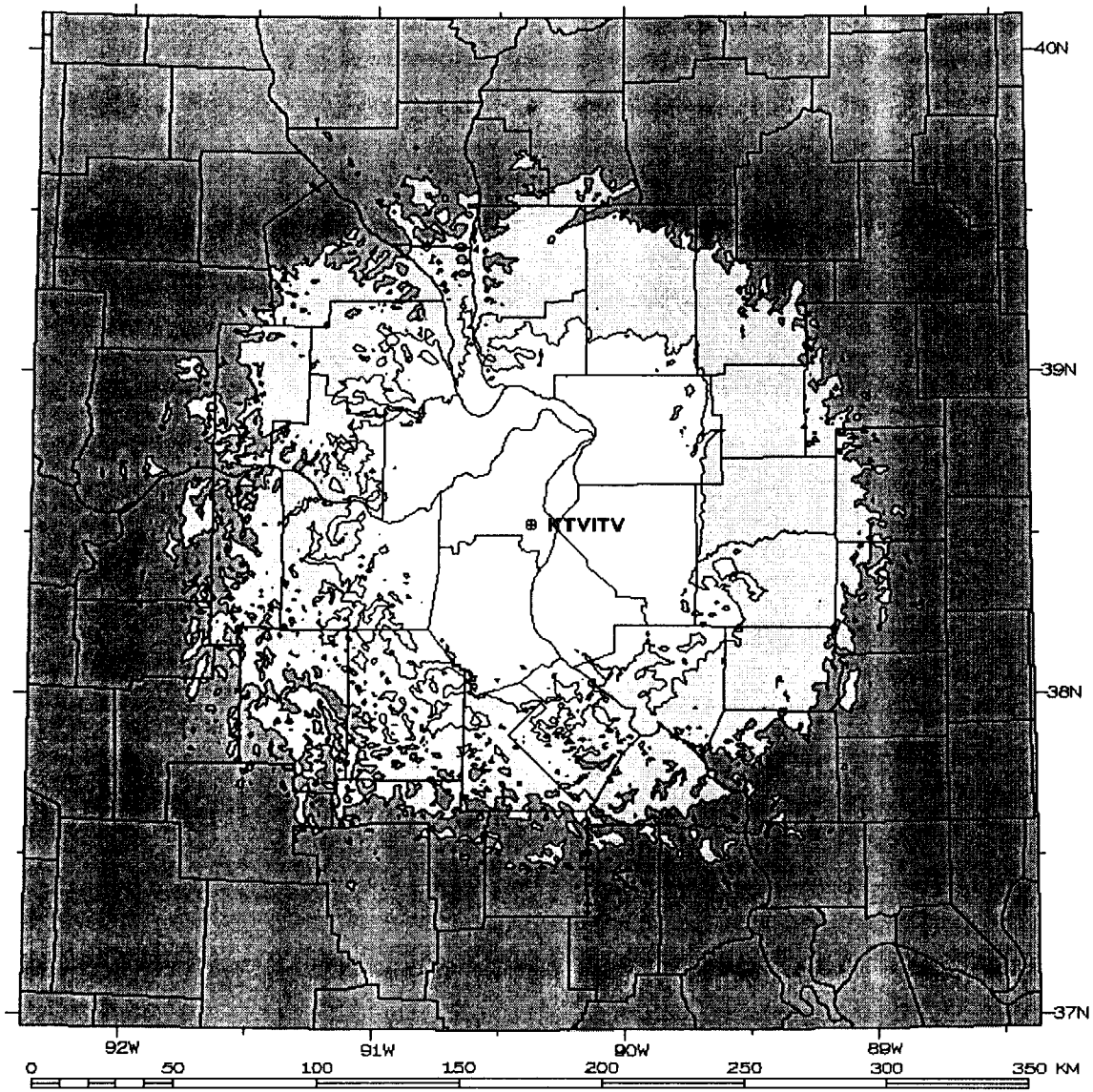
Market 21
St. Louis
KTVI/Channel 2
Network: FOX
FCC Contour Model (Grade B - 50/50)

SHVA Study

Grade A
Area: 10220. sq km
Population: 2385000.
Households: 828000.

Grade B
Area: 25520. sq km
Population: 484000.
Households: 148000.

Less than grade B
Area: 86160. sq km
Population: 1742000.
Households: 591000.



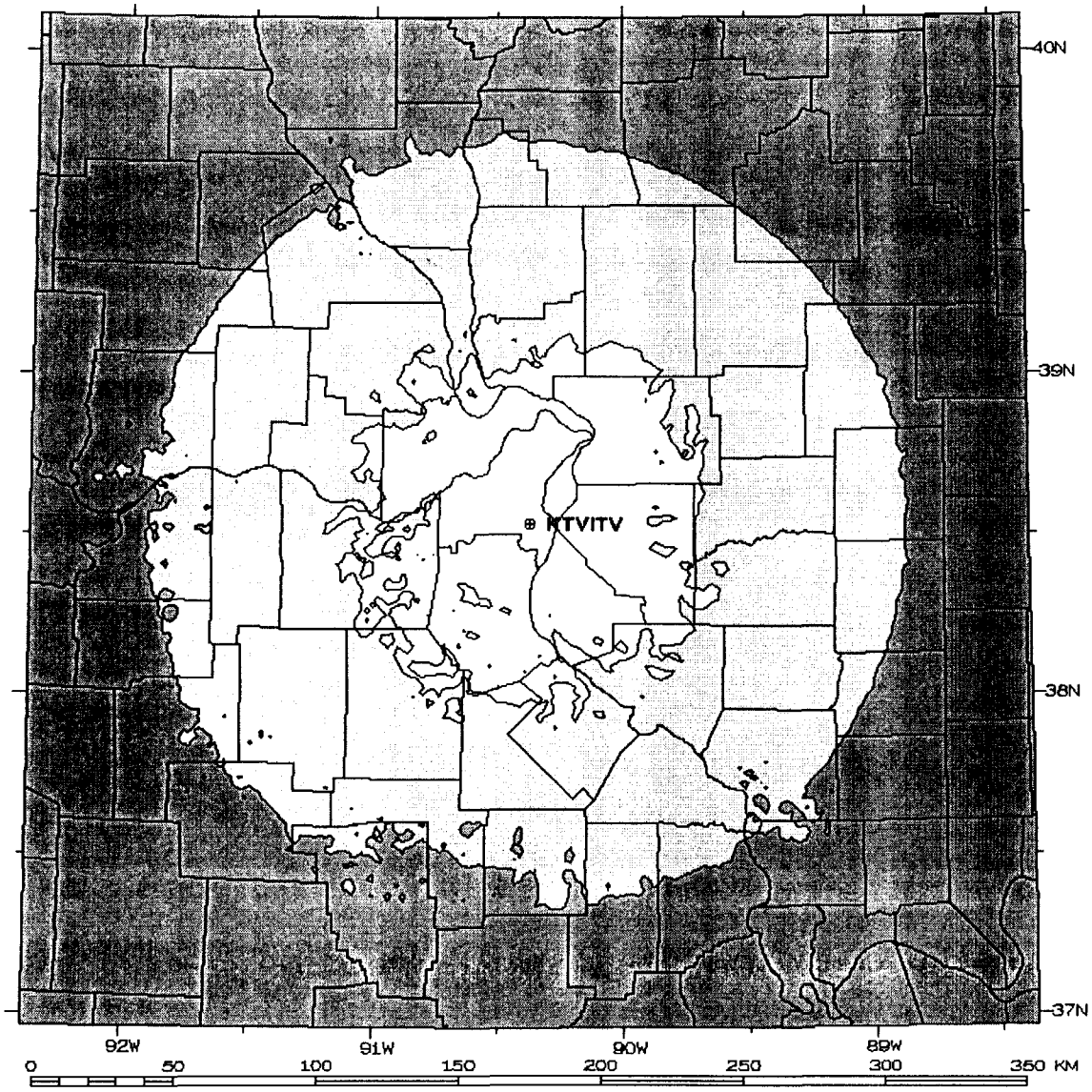
Market 21
St. Louis
KTVI/Channel 2
Network: FOX
Longley-Rice Irregular Terrain Model

SHVA Study

Grade A
Area: 14680. sq km
Population: 2523000.
Households: 870000.

Grade B
Area: 24520. sq km
Population: 400000.
Households: 127000.

Less than grade B
Area: 82810. sq km
Population: 1688000.
Households: 571000.



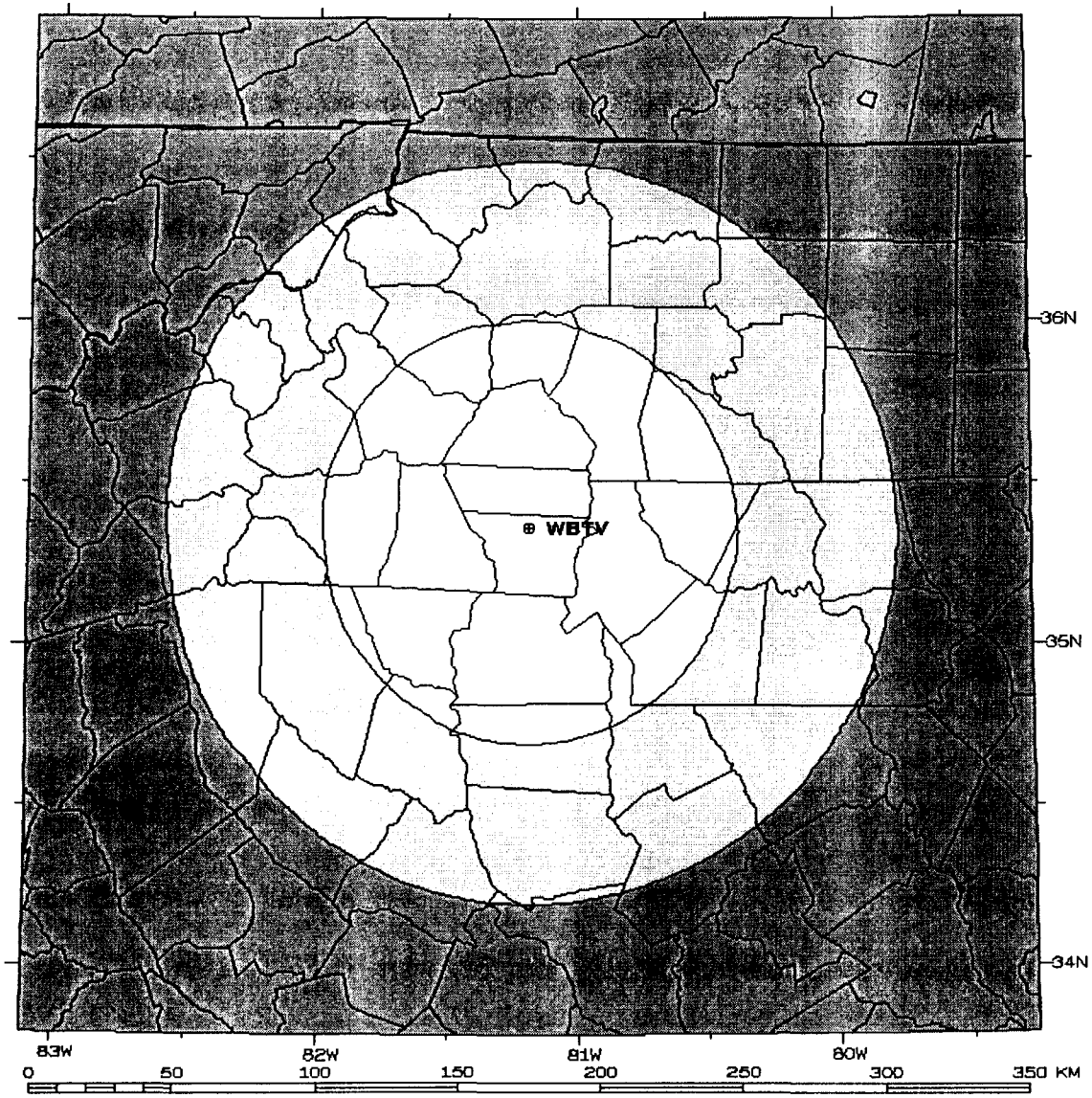
Market 21
St. Louis
KTVI/Channel 2
Network: FOX
TIREM Model

SHVA Study

Grade A
Area: 11590. sq km
Population: 2420000.
Households: 840000.

Grade B
Area: 43080. sq km
Population: 716000.
Households: 229000.

Less than grade B
Area: 68020. sq km
Population: 1474000.
Households: 498000.



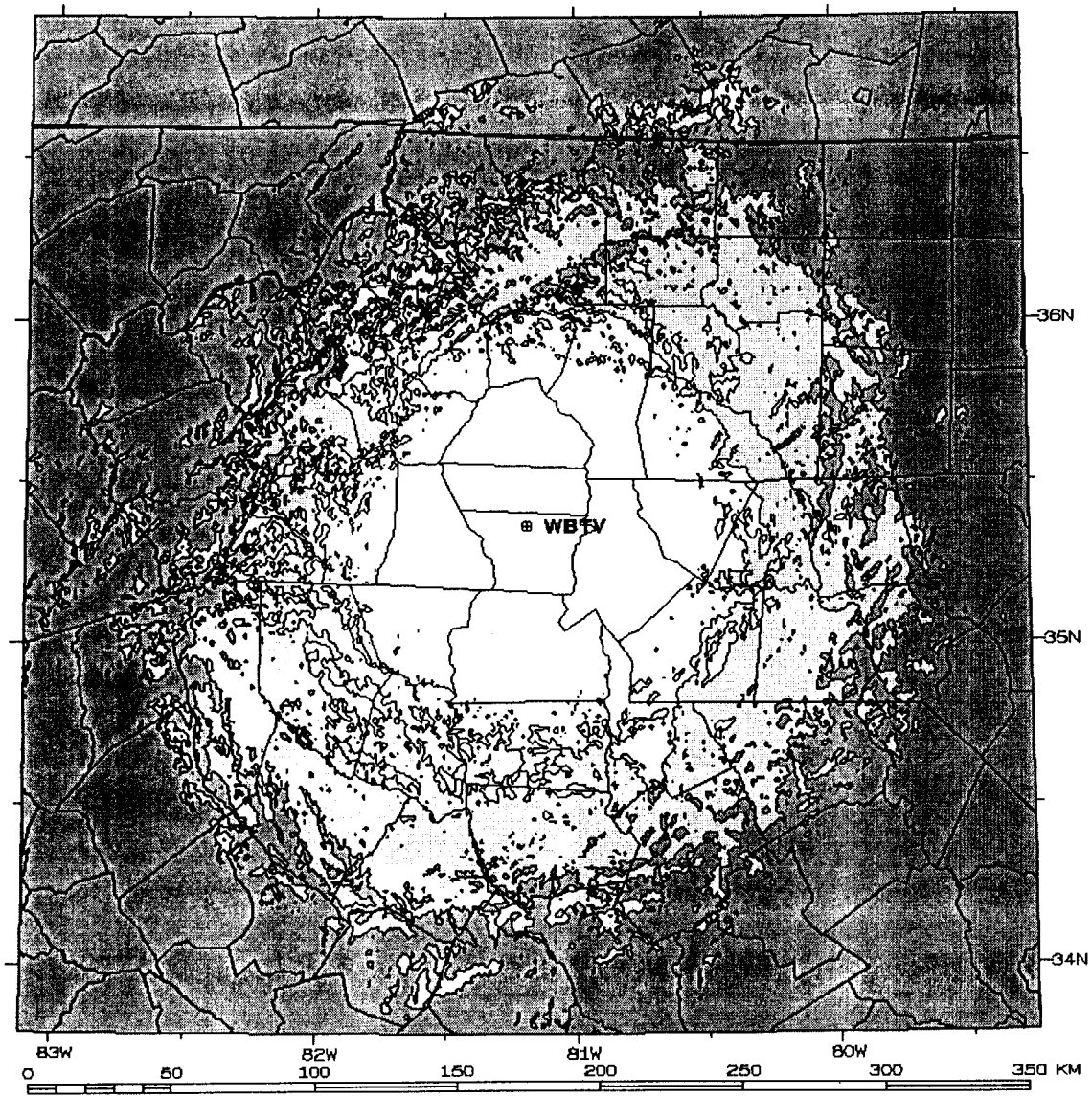
Market 28
Charlotte
WBTV/Channel 3
Network: CBS
FCC Contour Model (Grade B - 50/50)

SHVA Study

Grade A
Area: 16480. sq km
Population: 1918000.
Households: 549000.

Grade B
Area: 34940. sq km
Population: 1916000.
Households: 583000.

Less than grade B
Area: 71190. sq km
Population: 3583000.
Households: 1089000.



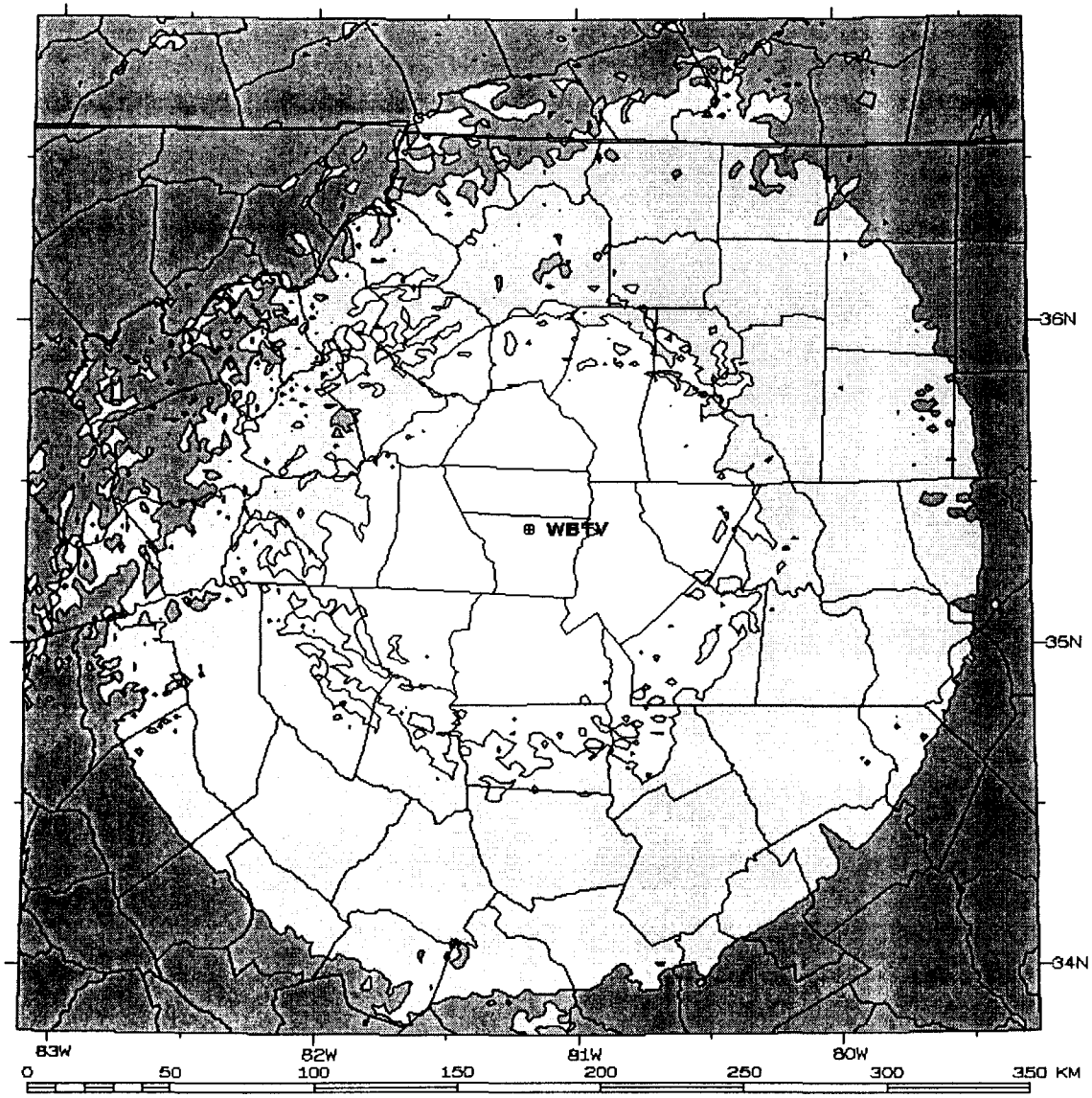
Market 28
Charlotte
WBTV/Channel 3
Network: CBS
Longley-Rice Irregular Terrain Model

SHVA Study

Grade A
Area: 20910. sq km
Population: 2113000.
Households: 606000.

Grade B
Area: 28290. sq km
Population: 1668000.
Households: 505000.

Less than grade B
Area: 73390. sq km
Population: 3636000.
Households: 1110000.



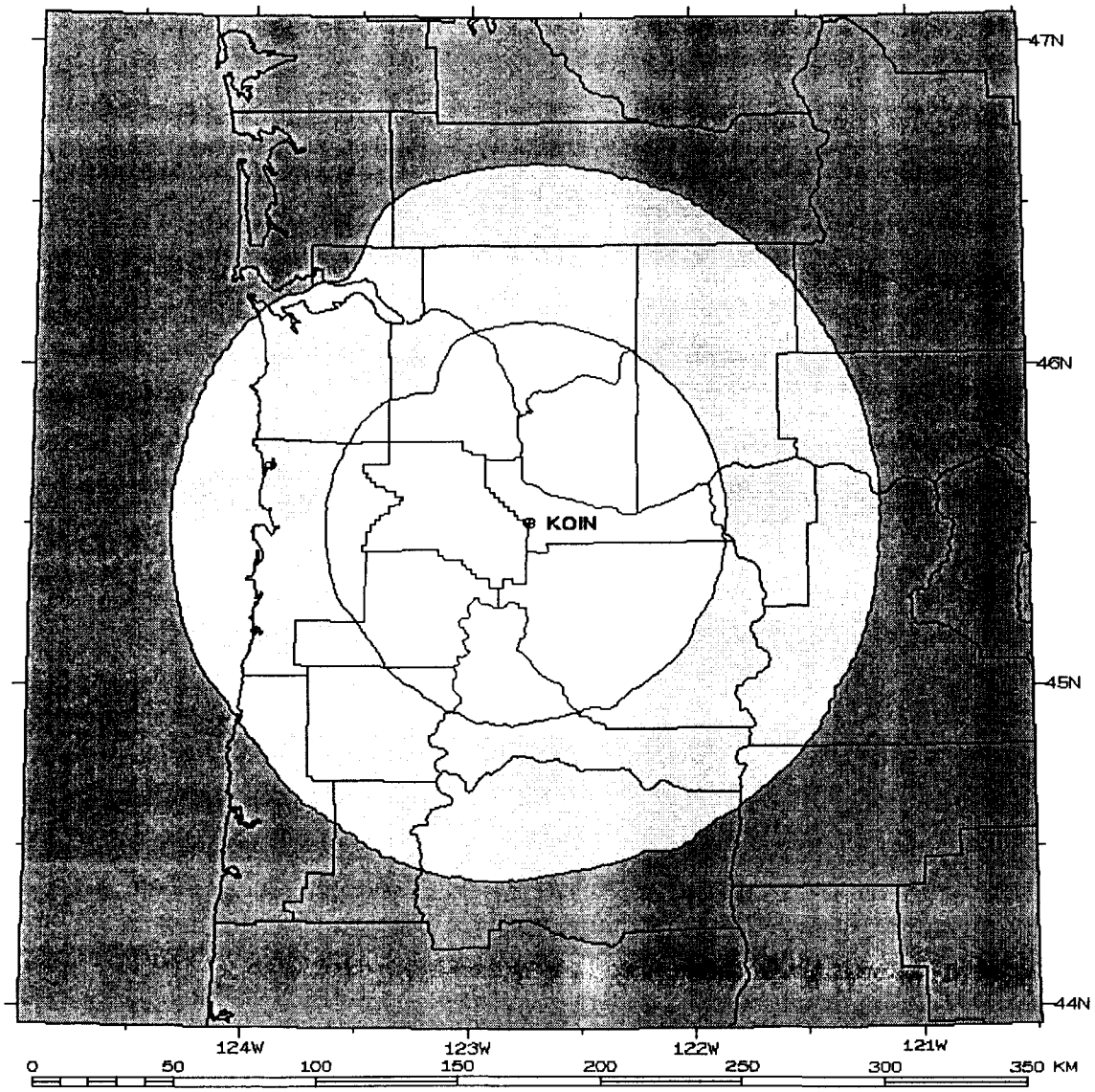
Market 28
Charlotte
WBTV/Channel 3
Network: CBS
TIREM Model

SHVA Study

Grade A
Area: 18790. sq km
Population: 2021000.
Households: 580000.

Grade B
Area: 52780. sq km
Population: 3166000.
Households: 961000.

Less than grade B
Area: 51020. sq km
Population: 2230000.
Households: 880000.



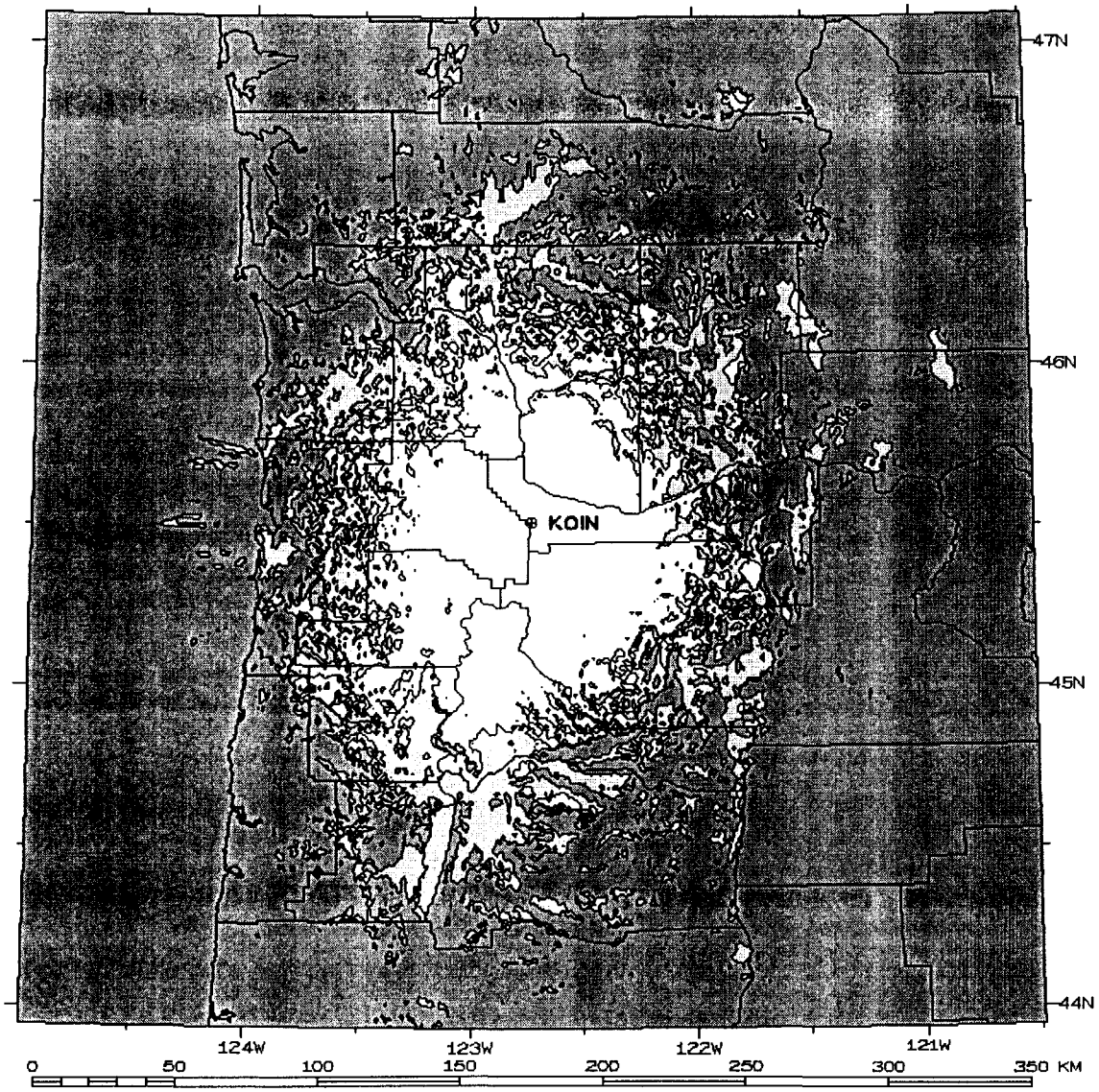
Market 24
Portland
KOIN/Channel 6
Network: CBS
FCC Contour Model (Grade B - 50/50)

SHVA Study

Grade A
Area: 14910. sq km
Population: 1988000.
Households: 814000.

Grade B
Area: 32430. sq km
Population: 527000.
Households: 164000.

Less than grade B
Area: 74890. sq km
Population: 972000.
Households: 296000.



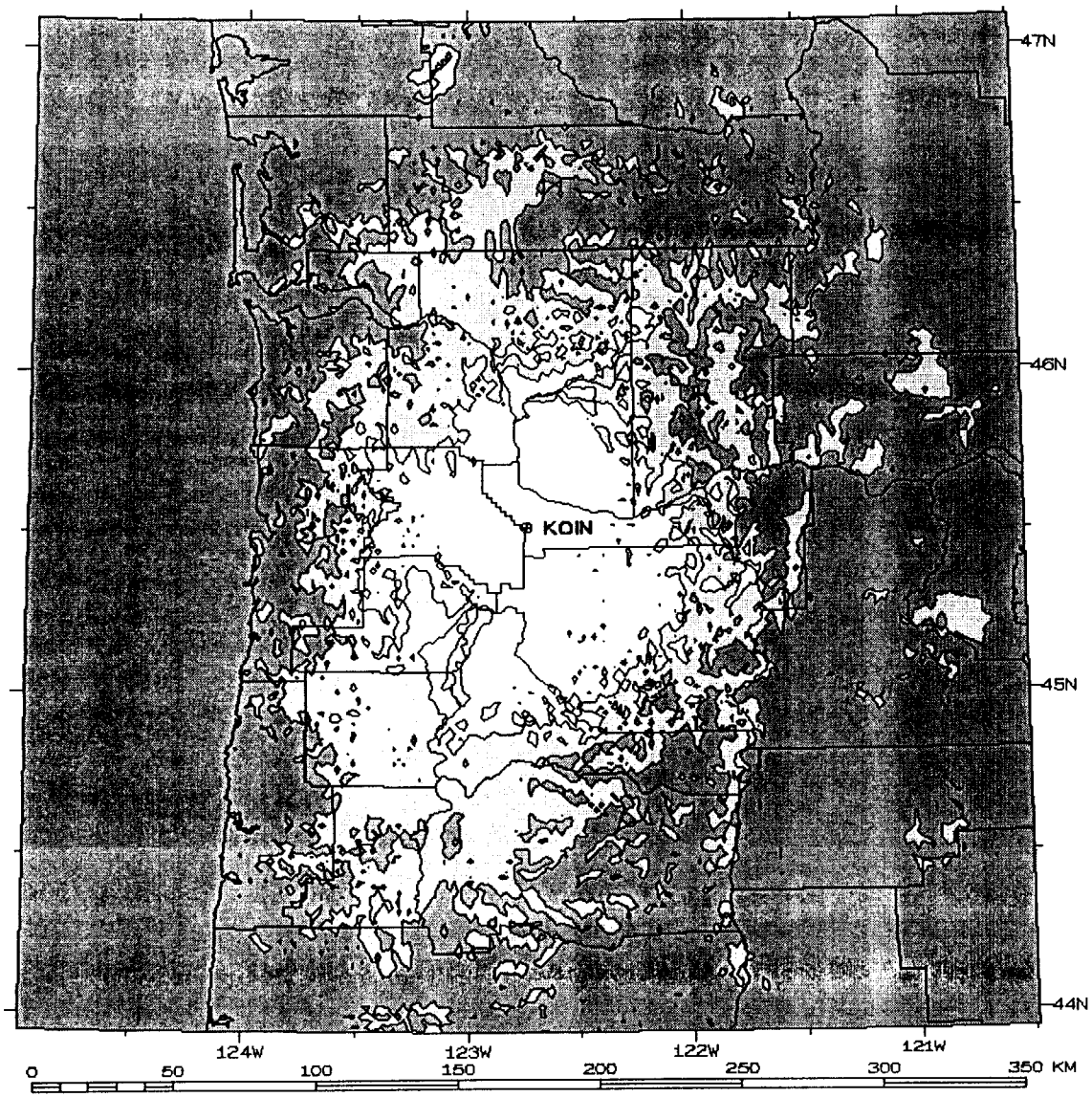
Market 24
Portland
KOIN/Channel 6
Network: CBS
Longley-Rice Irregular Terrain Model

SHVA Study

Grade A
Area: 13880. sq km
Population: 2073000.
Households: 642000.

Grade B
Area: 14650. sq km
Population: 249000.
Households: 74000.

Less than grade B
Area: 93720. sq km
Population: 1166000.
Households: 358000.



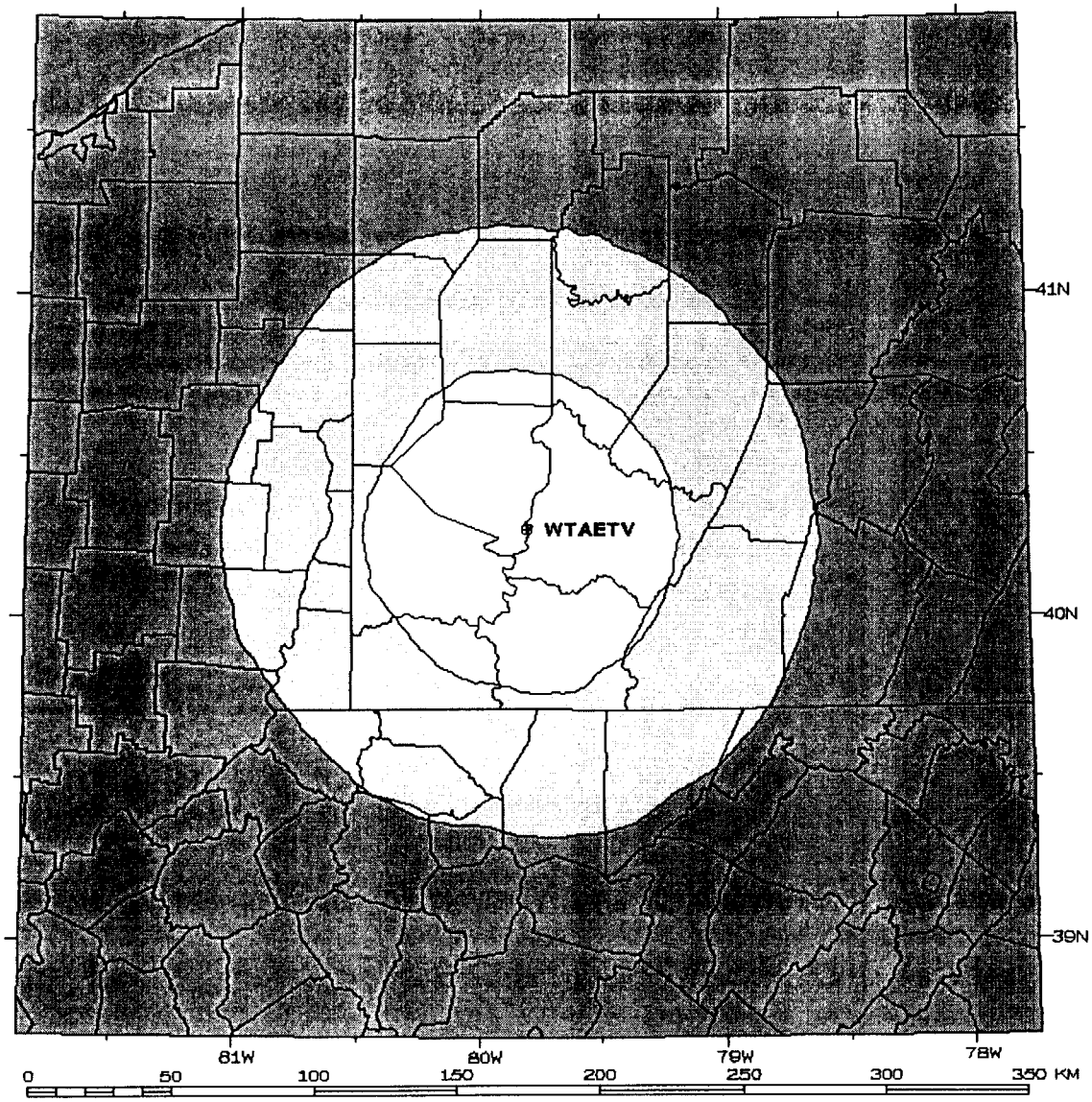
Market 24
Portland
KOIN/Channel 6
Network: CBS
TIREM Model

SHVA Study

Grade A
Area: 10850. sq km
Population: 1895000.
Households: 589000.

Grade B
Area: 23440. sq km
Population: 487000.
Households: 146000.

Less than grade B
Area: 87830. sq km
Population: 1106000.
Households: 336000.



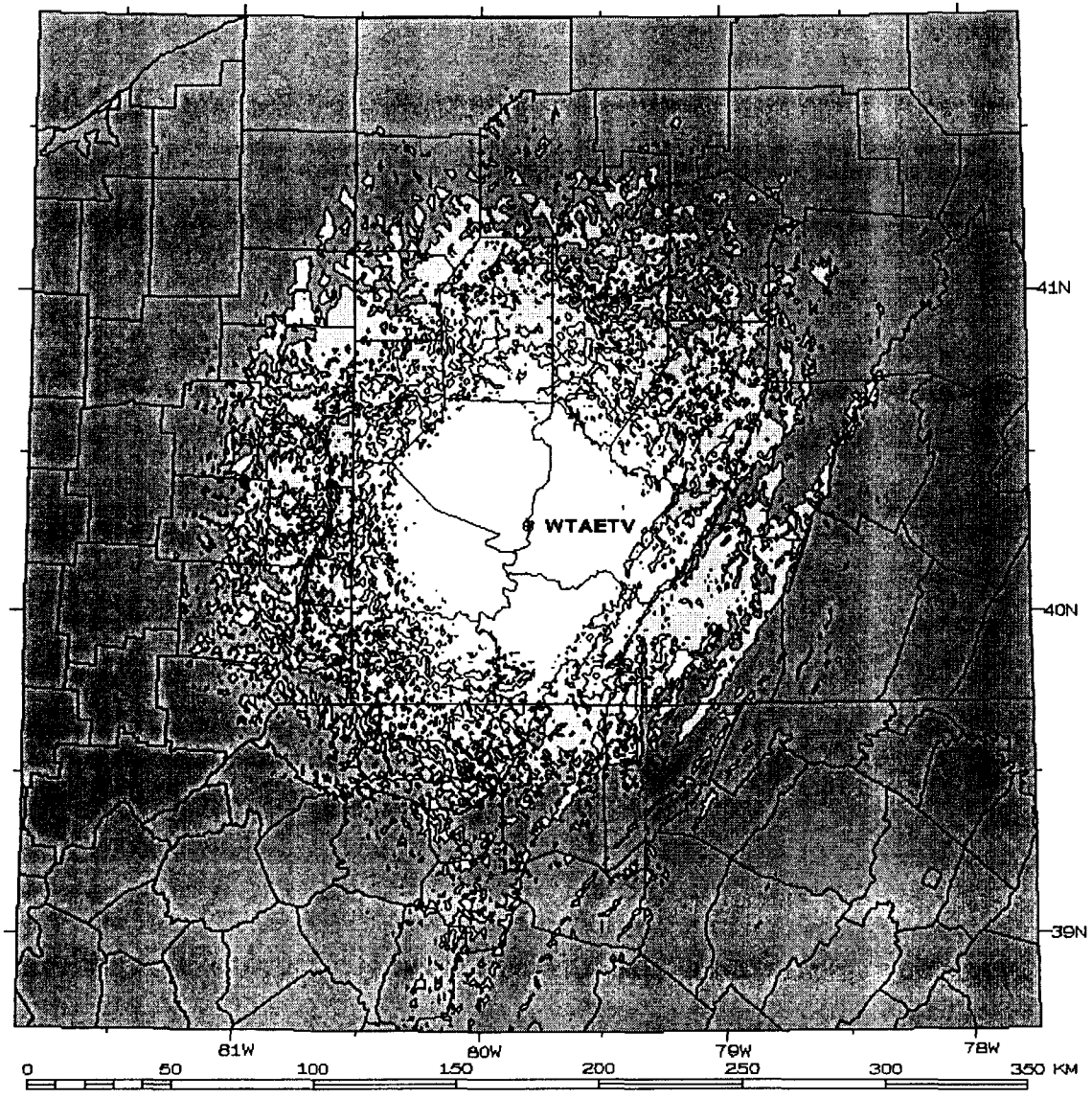
Market 19
Pittsburgh
WTAE/Channel 4
Network: ABC
FCC Contour Model (Grade B - 50/50)

SHVA Study

Grade A
Area: 9390. sq km
Population: 2136000.
Households: 793000.

Grade B
Area: 24580. sq km
Population: 1366000.
Households: 458000.

Less than grade B
Area: 88170. sq km
Population: 5434000.
Households: 1858000.



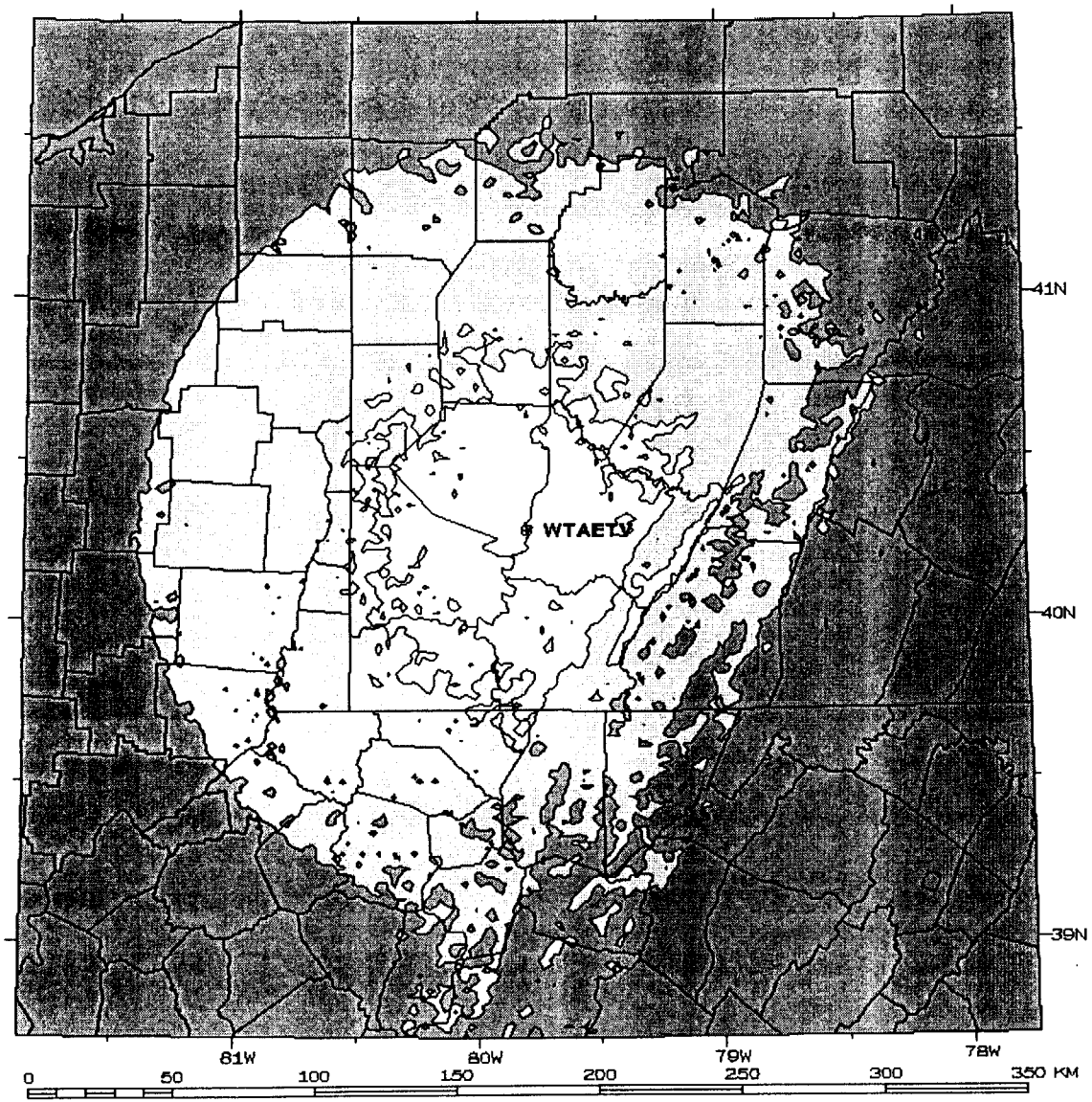
Market 19
Pittsburgh
WTAE/Channel 4
Network: ABC
Longley-Rice Irregular Terrain Model

SHVA Study

Grade A
Area: 11720. sq km
Population: 2266000.
Households: 832000.

Grade B
Area: 17760. sq km
Population: 962000.
Households: 320000.

Less than grade B
Area: 92680. sq km
Population: 5707000.
Households: 1957000.



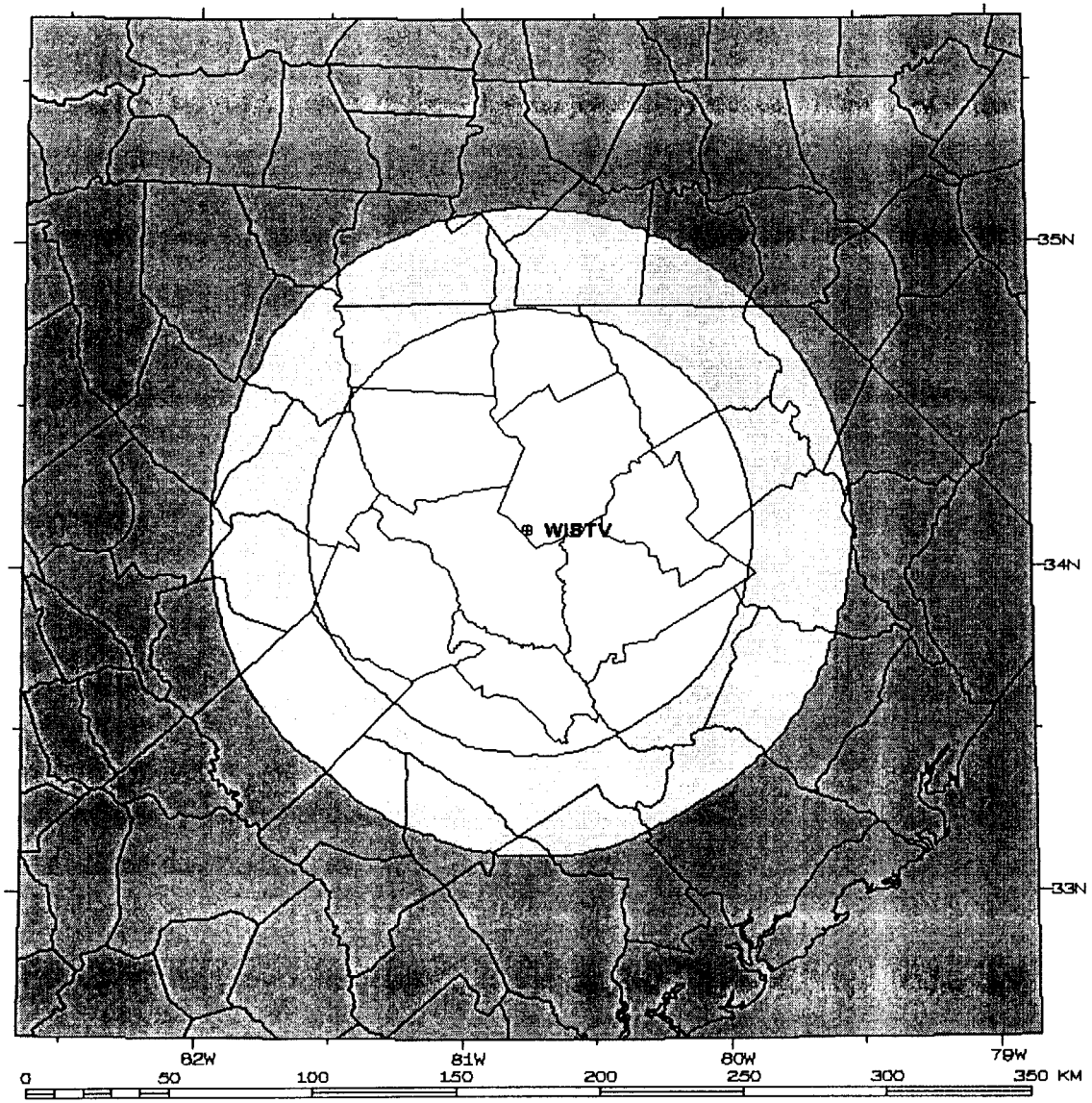
Market 19
Pittsburgh
WTAE/Channel 4
Network: ABC
TIREM Model

SHVA Study

Grade A
Area: 9000. sq km
Population: 2010000.
Households: 741000.

Grade B
Area: 37890. sq km
Population: 2166000.
Households: 741000.

Less than grade B
Area: 75220. sq km
Population: 4760000.
Households: 1628000.



Market 88
Columbia, SC
WIS /Channel 10
Network: NBC
FCC Contour Model (Grade B - 50/50)

SHVA Study

Grade A
Area: 18450. sq km
Population: 924000.
Households: 288000.

Grade B
Area: 20270. sq km
Population: 746000.
Households: 211000.

Less than grade B
Area: 83450. sq km
Population: 4651000.
Households: 1370000.

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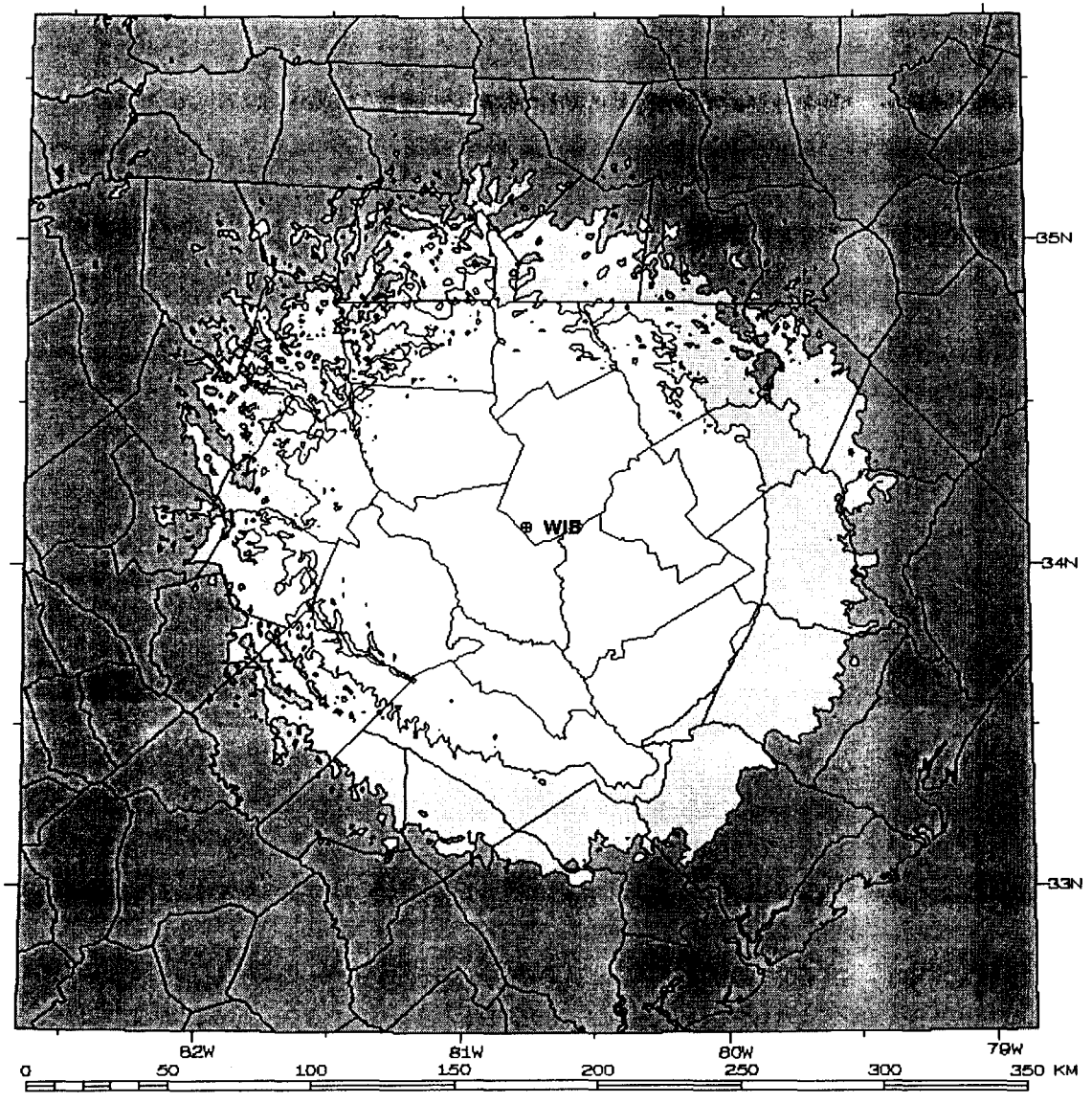


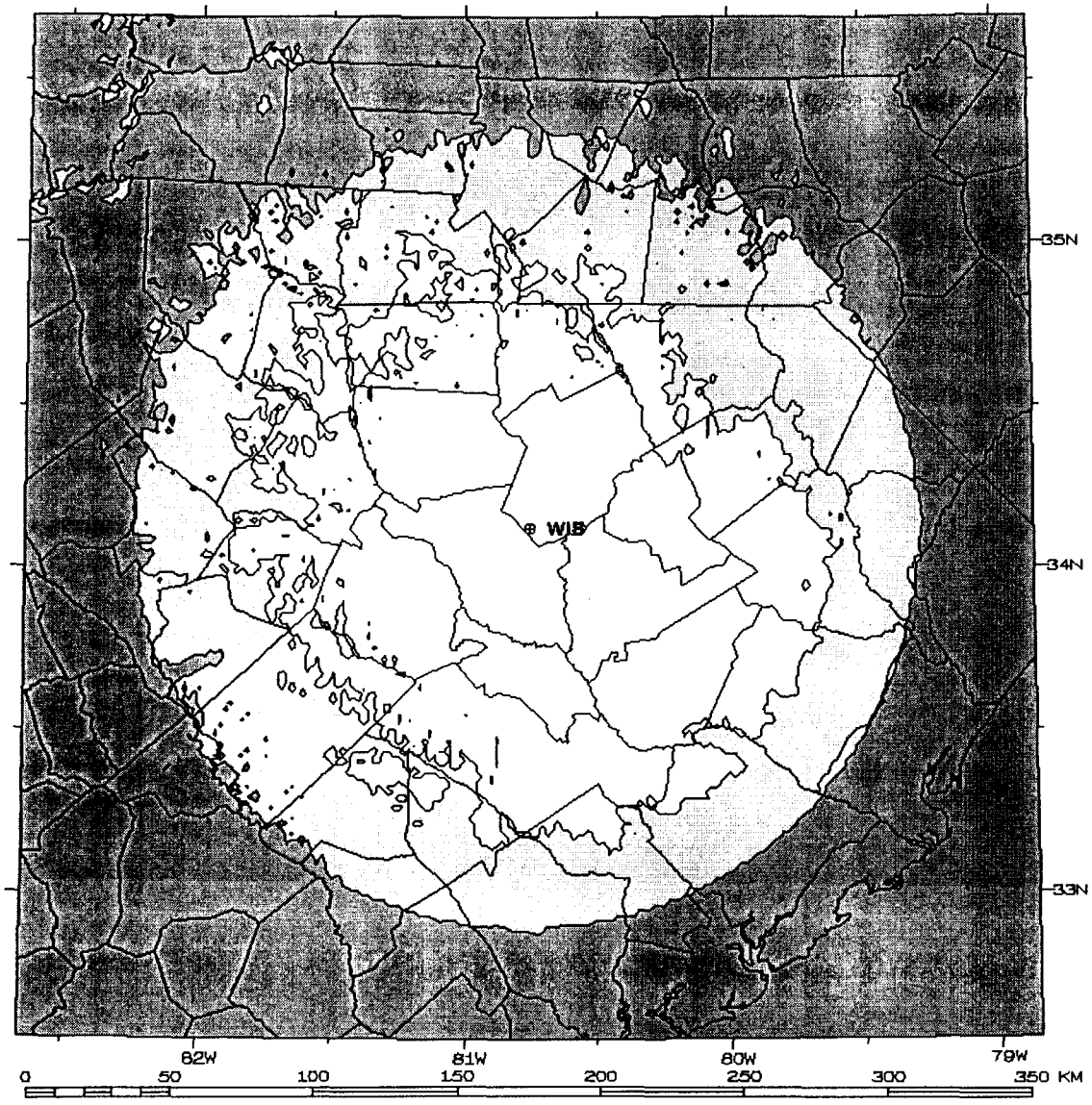
Market 88
Columbia, SC
WIS /Channel 10
Network: NBC
Longley-Rice Irregular Terrain Model

SHVA Study

Grade A
Area: 21090. sq km
Population: 1010000.
Households: 292000.

Grade B
Area: 19050. sq km
Population: 780000.
Households: 226000.

Less than grade B
Area: 82030. sq km
Population: 453i000.
Households: 133i000.



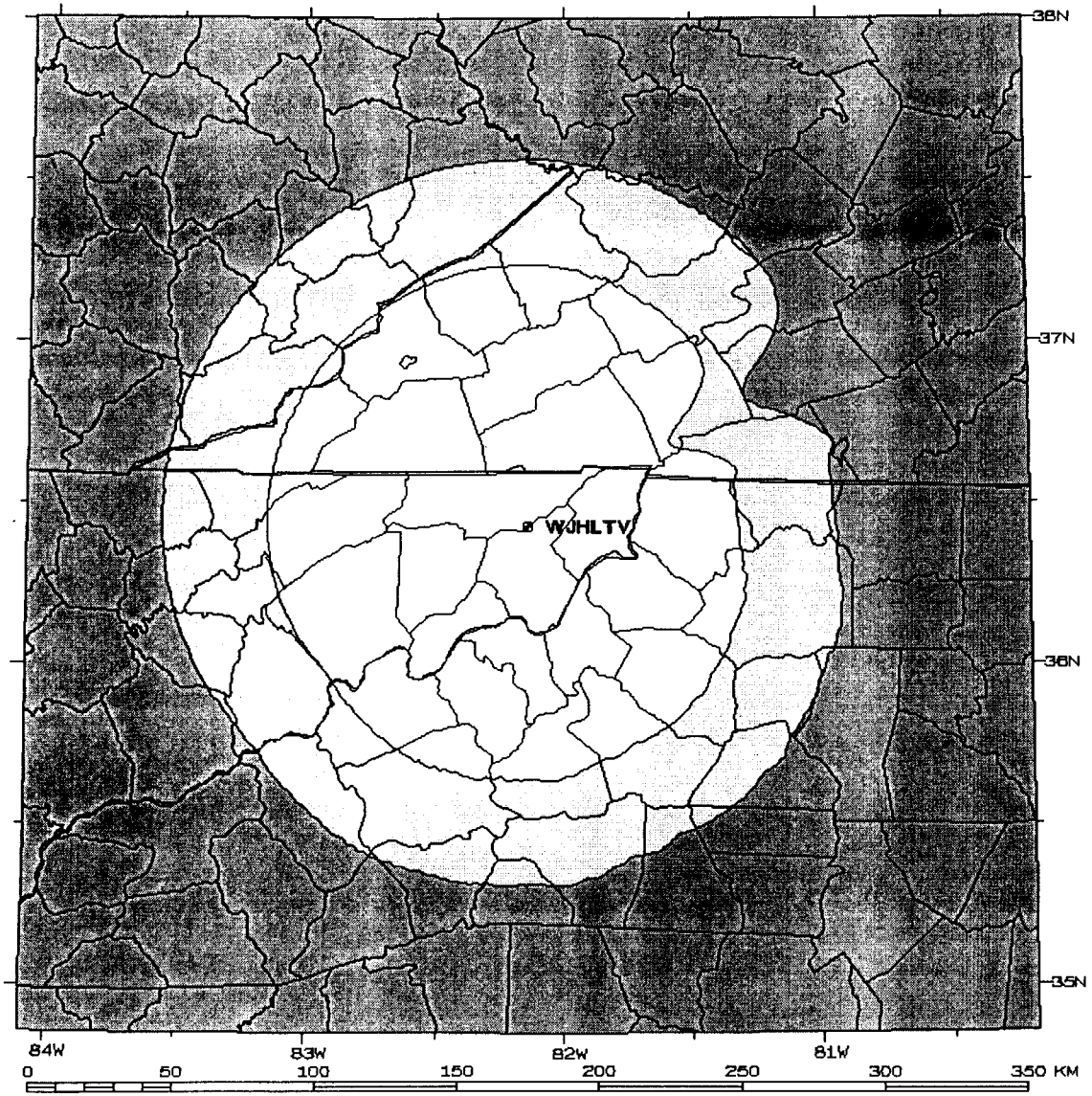
Market 88
Columbia, SC
WIS /Channel 10
Network: NBC
TIREM Model

SHVA Study

Grade A
Area: 27120. sq km
Population: 1237000.
Households: 358000.

Grade B
Area: 31120. sq km
Population: 1771000.
Households: 520000.

Less than grade B
Area: 63870. sq km
Population: 3314000.
Households: 972000.



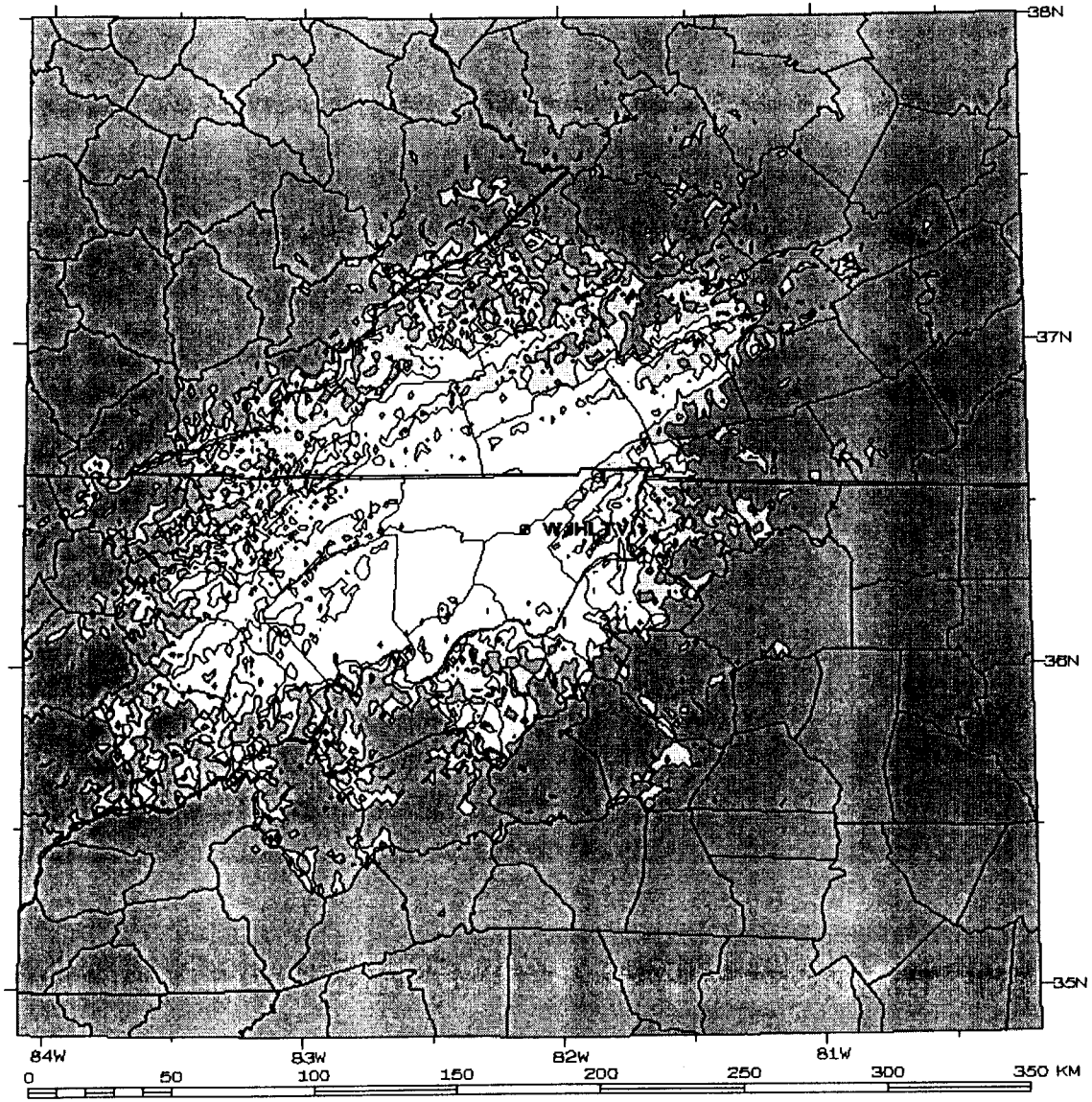
Market 93
Tri-Cities, TN-VA
WJHL/Channel 11
Network: CBS
FCC Contour Model (Grade B - 50/50)

SHVA Study

Grade A
Area: 23020. sq km
Population: 912000.
Households: 280000.

Grade B
Area: 23270. sq km
Population: 987000.
Households: 296000.

Less than grade B
Area: 76310. sq km
Population: 4333000.
Households: 1294000.



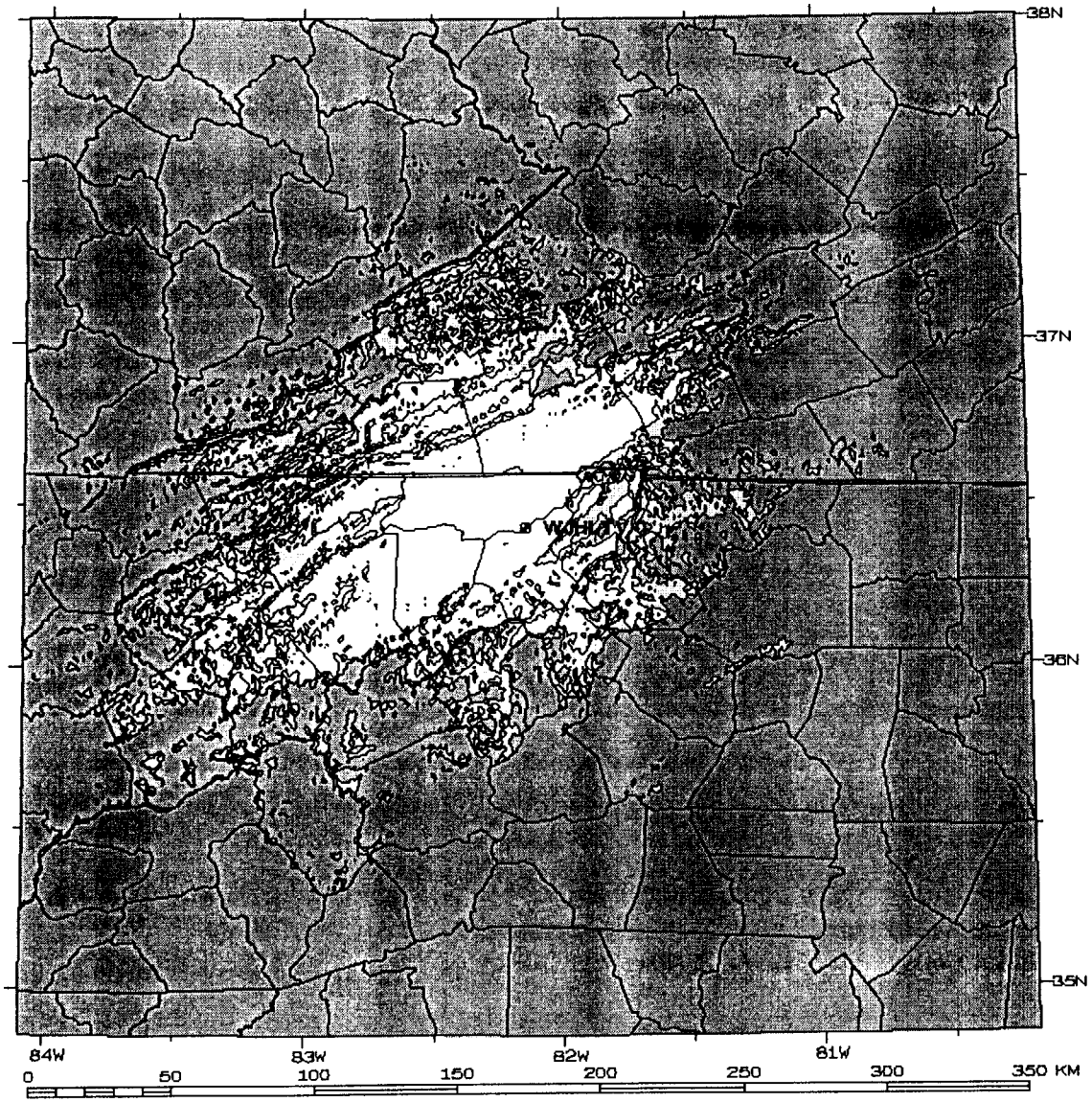
Market 93
Tri-Cities, TN-VA
WJHL/Channel 11
Network: CBS
TIREM Model

SHVA Study

Grade A
Area: 12780. sq km
Population: 613000.
Households: 190000.

Grade B
Area: 13460. sq km
Population: 405000.
Households: 119000.

Less than grade B
Area: 97080. sq km
Population: 5215000.
Households: 1561000.



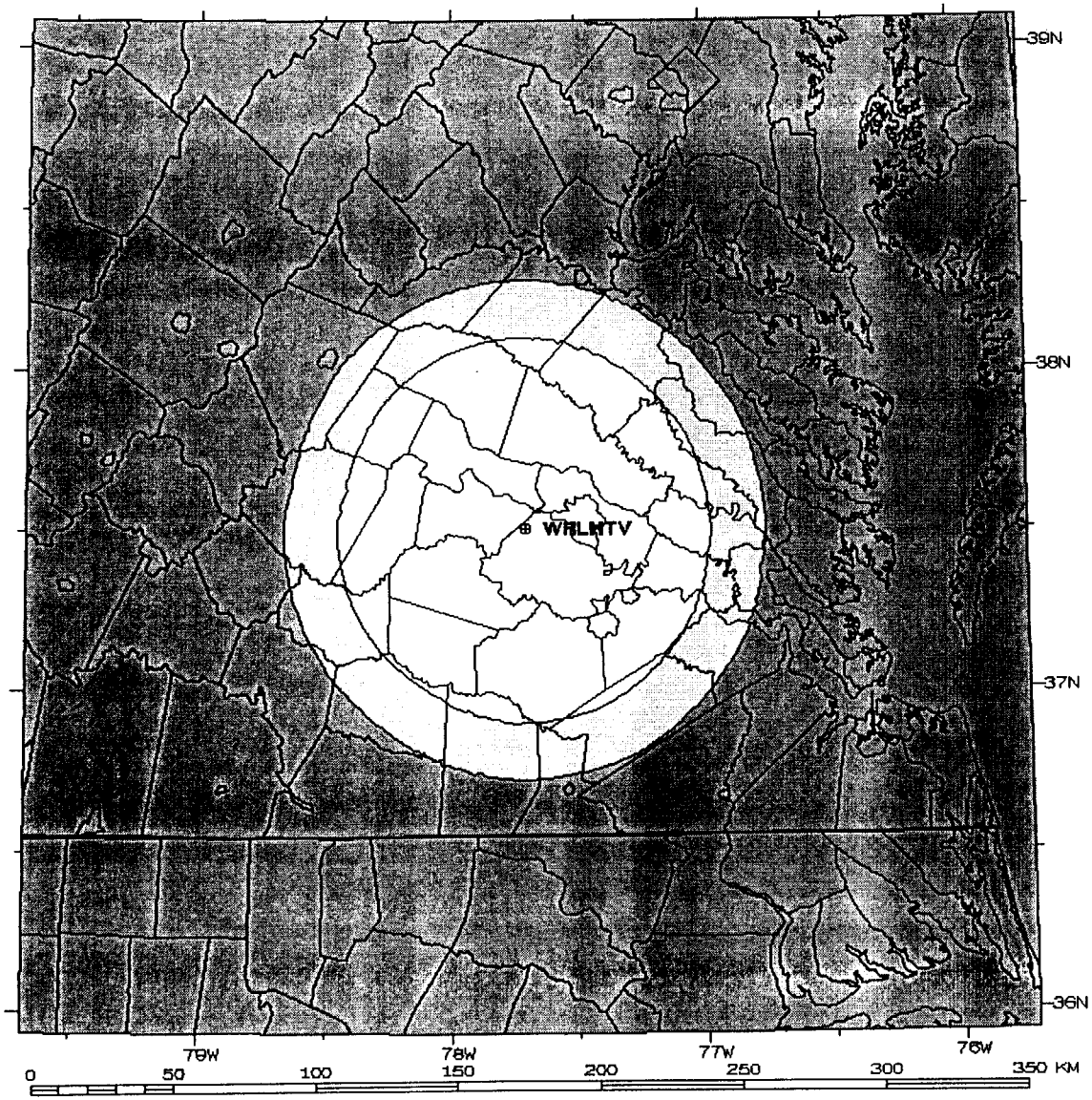
Market 93
Tri-Cities, TN-VA
WJHL/Channel 11
Network: CBS
Longley-Rice Irregular Terrain Model

SHVA Study

Grade A
Area: 10560. sq km
Population: 569000.
Households: 177000.

Grade B
Area: 9300. sq km
Population: 286000.
Households: 85000.

Less than grade B
Area: 103530. sq km
Population: 5377000.
Households: 1609000.



Market 59
Richmond-Petersburg
WRLH/Channel 35
Network: FOX
FCC Contour Model (Grade B - 50/50)

SHVA Study

Grade A
Area: 13540. sq km
Population: 1033000.
Households: 319000.

Grade B
Area: 9300. sq km
Population: 186000.
Households: 44000.

Less than grade B
Area: 99300. sq km
Population: 7649000.
Households: 2382000.

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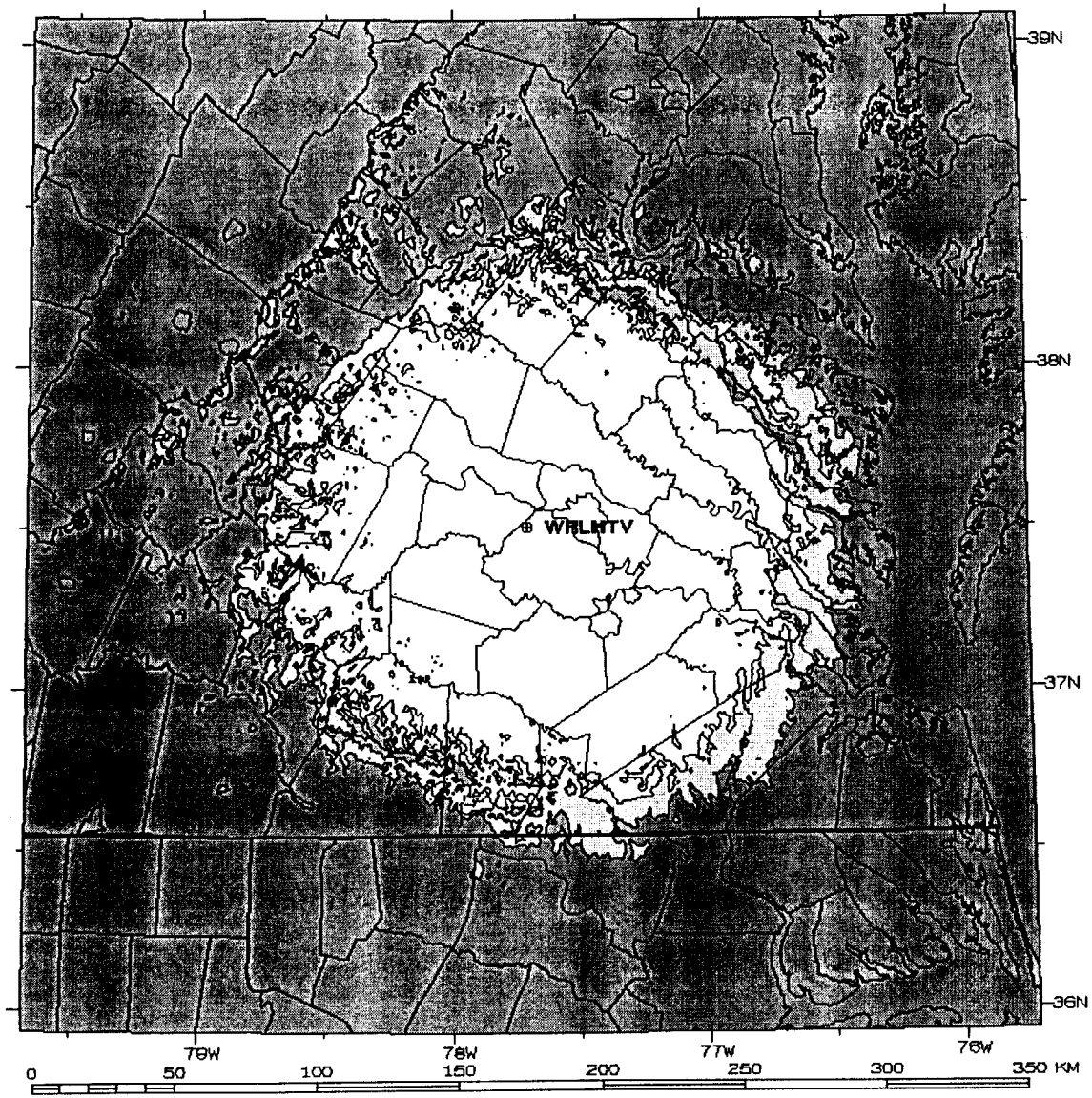


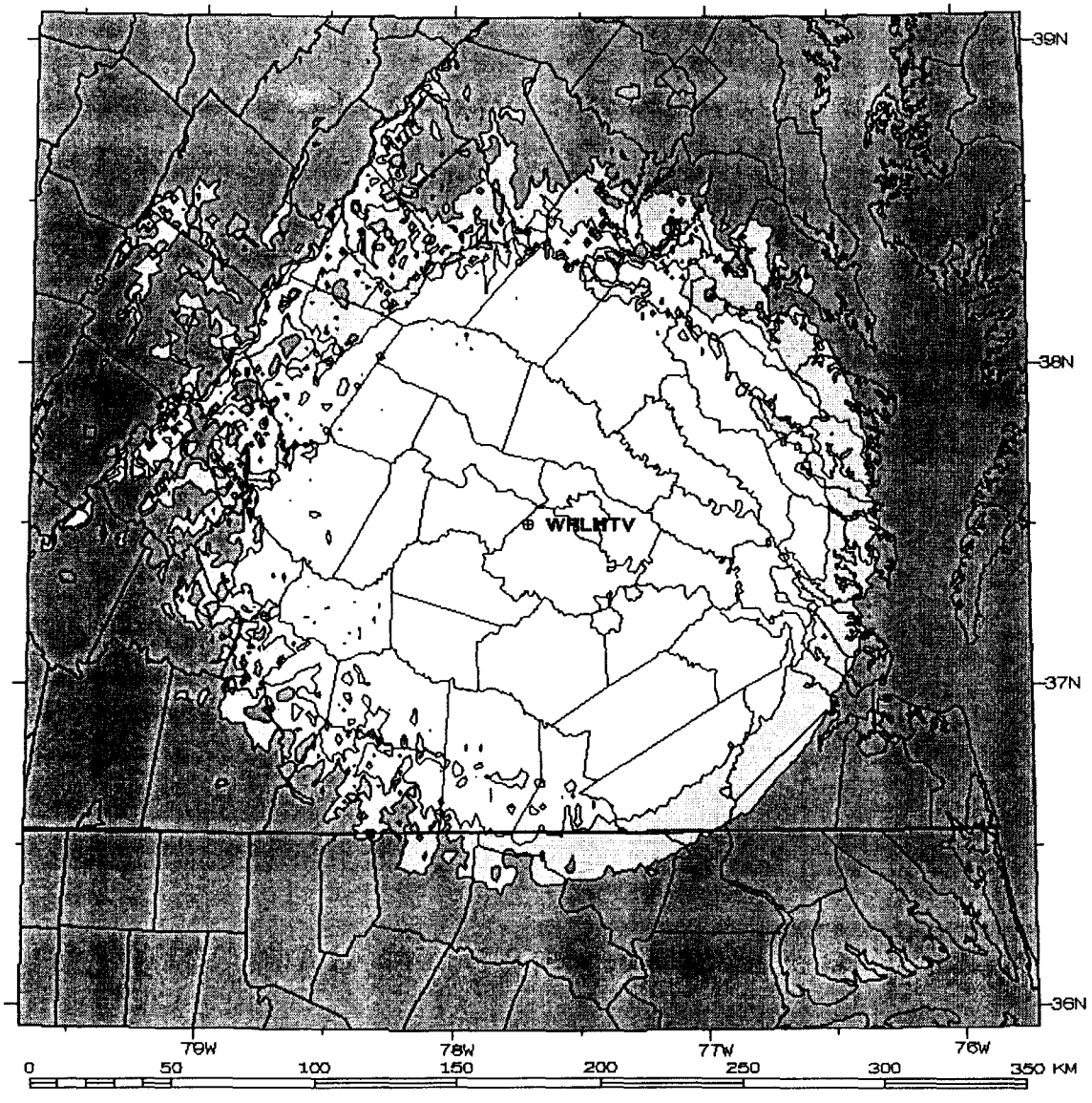
Market 59
Richmond-Petersburg
WRLH/Channel 35
Network: FOX
Longley-Rice Irregular Terrain Model

SHVA Study

Grade A
Area: 24460. sq km
Population: 1270000.
Households: 379000.

Grade B
Area: 8840. sq km
Population: 359000.
Households: 92000.

Less than grade B
Area: 88460. sq km
Population: 7239000.
Households: 2274000.



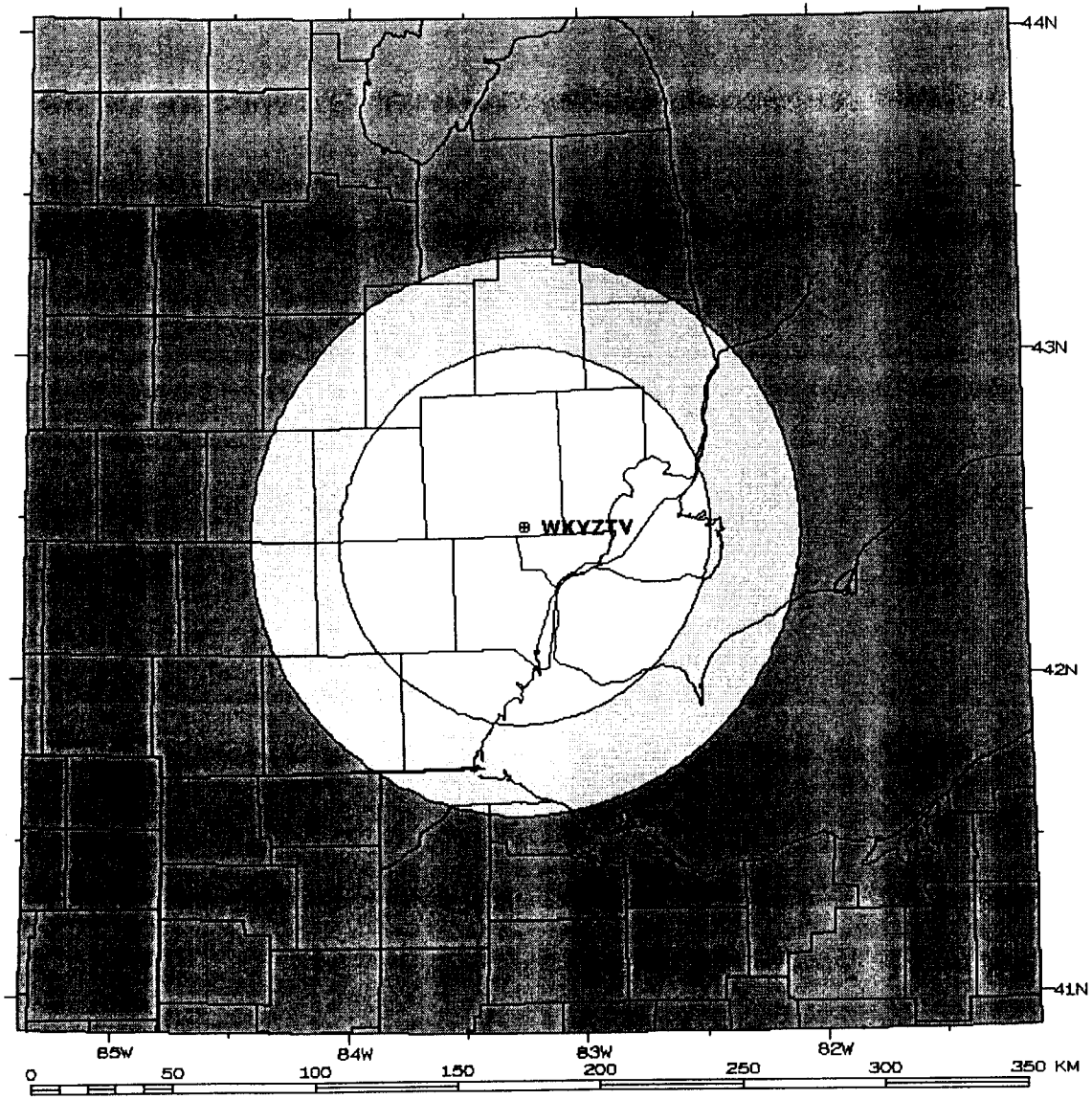
Market 59
Richmond-Petersburg
WRLH/Channel 35
Network: FOX
TIREM Model

SHVA Study

Grade A
Area: 32570. sq km
Population: 1533000.
Households: 448000.

Grade B
Area: 14390. sq km
Population: 661000.
Households: 181000.

Less than grade B
Area: 74690. sq km
Population: 6874000.
Households: 2116000.



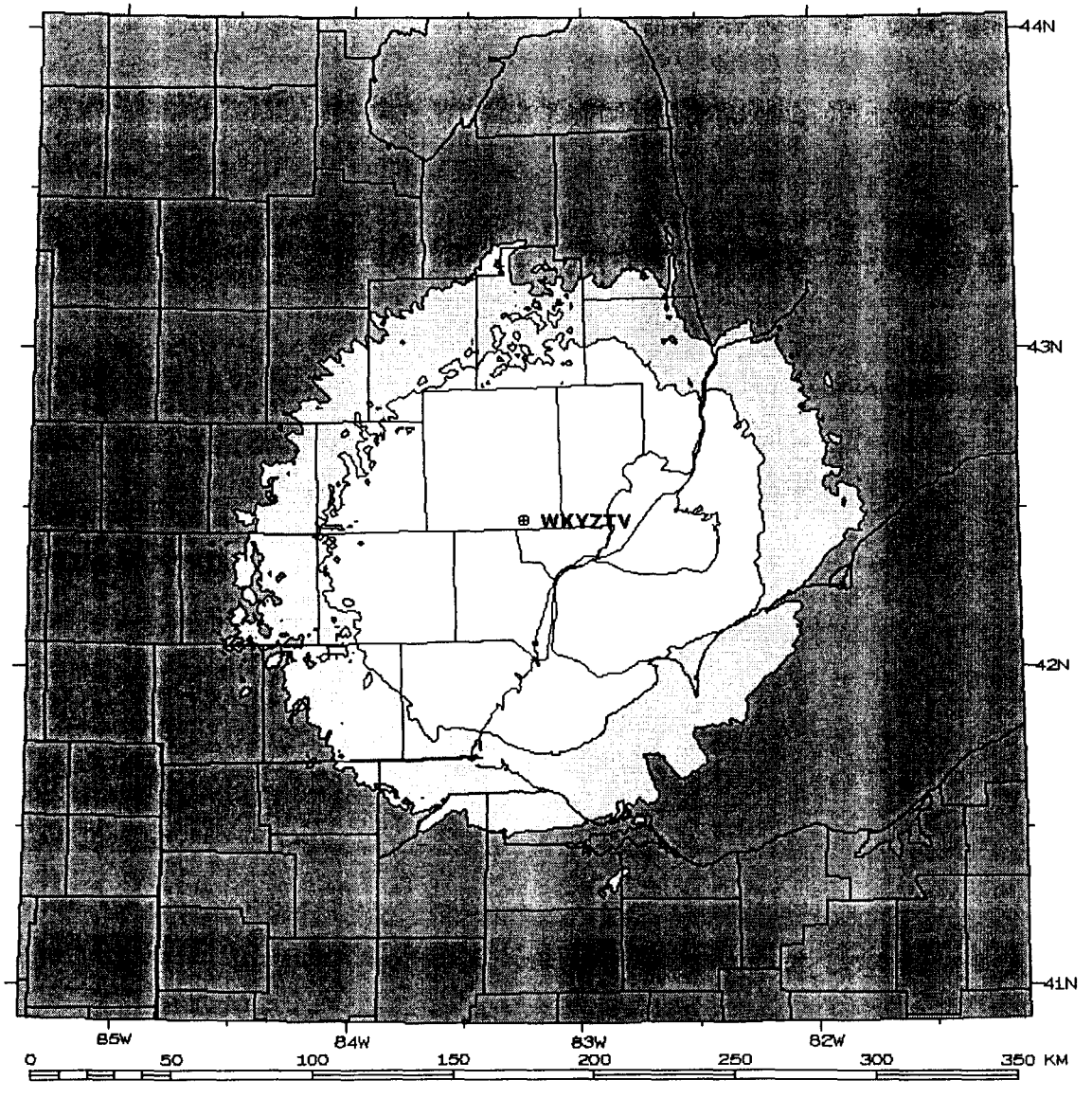
Market 9
Detroit
WXYZ/Channel 7
Network: ABC
FCC Contour Model (Grade B - 50/50)

SHVA Study

Grade A
Area: 13100. sq km
Population: 4885000.
Households: 1590000.

Grade B
Area: 15860. sq km
Population: 1188000.
Households: 388000.

Less than grade B
Area: 94370. sq km
Population: 5765000.
Households: 1925000.



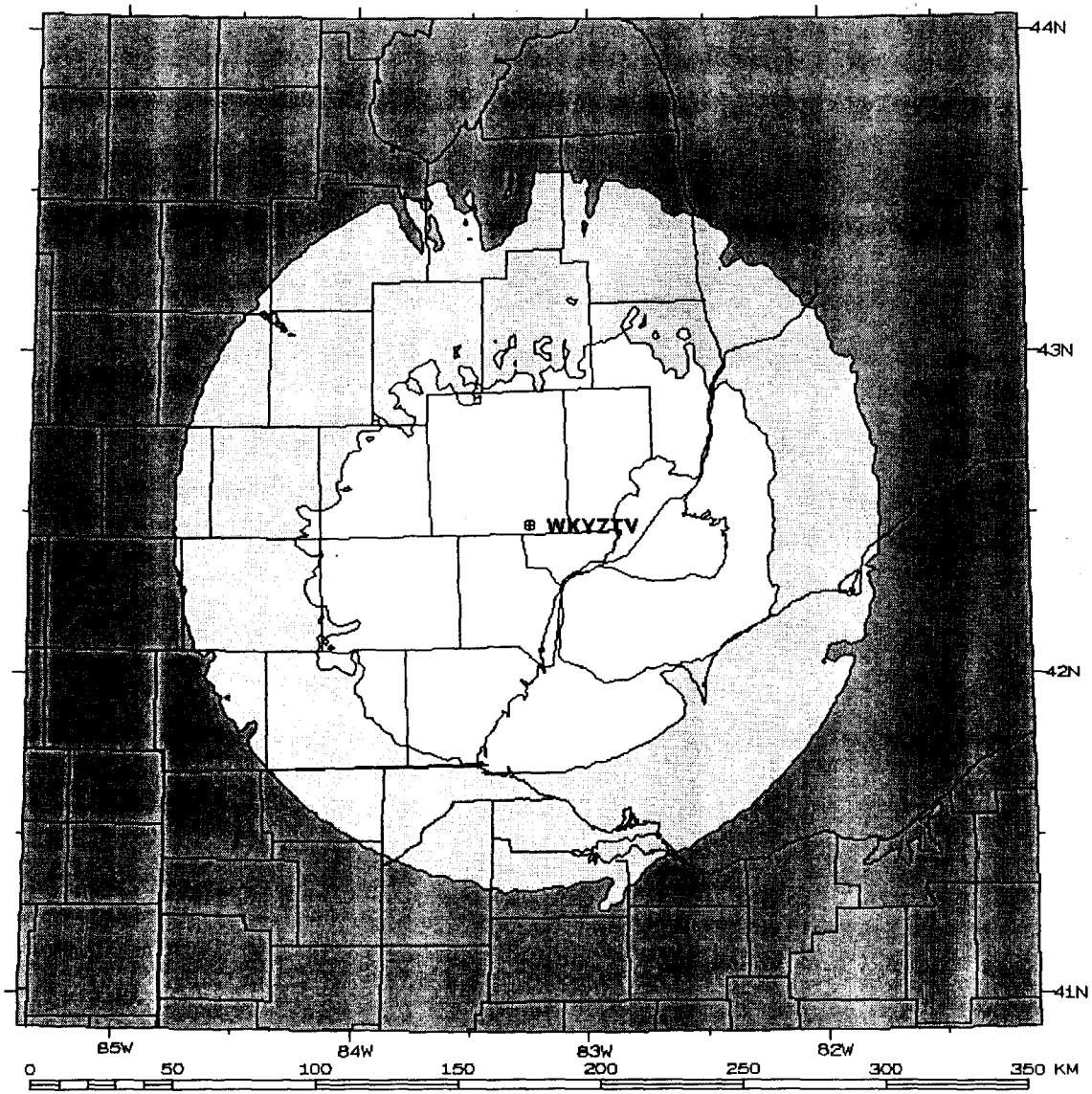
Market 9
Detroit
WXYZ/Channel 7
Network: ABC
Longley-Rice Irregular Terrain Model

SHVA Study

Grade A
Area: 16620. sq km
Population: 4729000.
Households: 1601000.

Grade B
Area: 14380. sq km
Population: 1252000.
Households: 421000.

Less than grade B
Area: 92210. sq km
Population: 5557000.
Households: 1881000.



Market 9
Detroit
WXYZ/Channel 7
Network: ABC
TIREM Model

SHVA Study

Grade A
Area: 18590. sq km
Population: 4838000.
Households: 1636000.

Grade B
Area: 28630. sq km
Population: 2058000.
Households: 880000.

Less than grade B
Area: 75390. sq km
Population: 4742000.
Households: 1586000.